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An Analysis of Expenditure Patterns of the Elderly

FACTORS AFFECTING EXPENDITURES OF THE ELDERLY: AGE VS. INCOME

by

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ABSTRACT

The relative impact of age and income factors on the expenditure patterns of the elderly are explored through the use of three different analysis procedures. Each of the three has limitations but collectively and commonly they point to the dominance of income effects over age effects.

A recent and pervasive shift in the criteria used to determine the adequacy of lifestyles of the elderly has occurred. In the past reports, discussions and benchmarks focussed on the incomes of seniors to determine if their resources were adequate. There is no question that the incomes of the elderly are on average lower than that of younger Canadians. Table 1 shows the picture for 1983. The average incomes of families and unattached individuals increase with each higher age group until 55-64 when they make a slight turn down. It should be recognized that many people do retire before age 65, accounting for some of this drop. However, in the over 65 age group the income average drops sharply to almost the level of the youngest group and is less than 60% of that of the highest income group.

It may be unwise, however, to assume that elderly households should have the same level of income as others. Several reasons can be suggested as to why they may need less:

(1) they have generally smaller households - usually only one or two members;

(2) their households are contracting in terms of needs for capital because of the declining number of household members;

(3) people who are old do less, i.e., they have a declining set of role responsibilities. They no longer have a parent role or a worker role, so they need fewer consumables to help them fulfill these roles - fewer clothes, less food, transportation, etc.;

TABLE 1
INCOME AND FAMILY EXPENDITURES, BY AGE OF HEAD, 1978

	Families of Two or More Persons					
Age	Under 25 Years	25-34	35-44	45-54	55-64	65 and Over
Average Income (1982)* (Families)	21,717	30,440	36,355	40,618	34,815	24,077
Average Expenditures** (Families of Two or More)						
Food	3,422	4,342	5,527	5,655	4,528	3,250
Shelter	4,268	5,737	6,119	5,312	4,161	3,306
Household Operation	1,067	1,533	1,567	1,335	1,080	812
Household Furnishes and Equipment	1,060	1,229	1,227	1,291	,934	653
Clothing	1,689	1,808	2,312	2,452	1,645	944
Personal Care	494	549	654	677	506	334
Medical and Health Care	393	521	671	750	622	419
Tobacco and Alcoholic Beverages	1,156	1,003	984	1,163	999	495
Transportation	3,442	3,455	3,931	4,632	3,938	2,395
Recreation, Reading, Education	1,686	1,717	2,236	2,406	1,423	791
Miscellaneous	741	938	972	1,071	849	457
Total Current Consumption	19,416	22,832	26,199	26,743	20,683	13,855
Taxes, Securities, Gifts	4,728	7,374	9,079	9,904	7,934	3,697
Total Expenditures	24,143	30,206	35,278	36,647	28,618	17,552

* **Source:** Calculated from Statistics Canada (1984), Income Distributions by Size in Canada, 1982, Catalogue Number 13-207, p. 35.

** **Source:** Statistics (1982), Family Expenditures in Canada 1982, unpublished data.

(4) their interests and desires have shifted from outside the household to inside the household. Therefore, they need fewer goods and services which are useful to those contacting others, e.g., clothing and transportation;

(5) their futures are more constrained, therefore, they need to do less planning for long-term financial security; and

(6) even if their needs are not diminished, the need for money to meet these needs is diminished through the provision of income-in-kind by government agencies, businesses and relatives.

Again, there is little question that consumption decreases with age after reaching a peak in the middle years. Table 1 also lists some of the major expenditure categories and the average spent on each in 1982 by age of household head for households of two or more persons. In virtually every category, the amounts spent decline for the last two age groups. Again, most of these declines are particularly dramatic after age 65.

However, the bases of the contracting needs arguments and hence the validity of their conclusions are assailed on several fronts by those who argue that:

(1) consumption expenditure declines are caused by limited incomes, not by limited or reduced desires. The smaller incomes of the elderly constrain their abilities to spend more;

(2) declining role involvement and participation in activities outside the home is a sign of a poor adjustment to old age. There is no rule predetermining such a decline or disengagement. It occurs mainly in the elderly who lack resources to exercise a range of alternate roles when there are declines in some roles like parent and worker roles;

(3) the needs of the elderly do not diminish because the role changes are not as dramatic as may be suggested. Parental roles are not relinquished by seniors but rather there is a shift within the role execution to aspects emphasizing emotional ties and financial support. This financial support

is just as likely to flow from elderly parents to adult children as vice versa. Worker roles are also not necessarily abruptly terminated at age 65. Some people stop working before this age, and others prolong their working life in a full- or part-time capacity for many years. So a precipitous drop in expenditures at age 65 should be not expected; and

(4) instead of declining, the needs of the elderly in several areas are increasing. Health and personal care needs increase especially for that group over 75 years of age often called the old-old. Special diets to treat diseases may increase food expenditure needs. Alterations of housing facilities may be needed to accommodate decreased mobility. Since many seniors own their own home, a major asset acquired over a lifetime, high repair, maintenance and heating costs will be incurred. Increased transportation needs arise from more free time to pursue personal interests. Similarly, spending on recreation goods and services may increase.

Arguments on both sides are logical and compelling, so the conclusion is not easily made as to whether or not the lower income levels experienced by the elderly are adequate to meet their biological, psychological and social needs.

Replacement Ratios

From another perspective of relative well-being and distributive justice has emerged an alternate approach to determining appropriate income and expenditure levels of the elderly. The shift of focus in recent government white papers and task force reports (see, for example, Report of the Parliamentary Task Force on Pension Reform, 1983) has been away from absolute incomes to replacement ratios as a criteria for adequacy. Replacement ratios deal with the ratio of post-retirement income to pre-retirement income. The person serves then as his/her own benchmark for relative and relevant comparisons of pre- and post-retirement life quality. Relative position and income levels are known to be important to feelings of well-being. If an individual per-

ceives relatively little change in his/her lifestyle upon retirement, then he/she will be most satisfied and will be spared any traumatic shocks likely to be associated with dramatic downward shifts.

However, the question still remains as to what is an appropriate replacement ratio. Because of the availability in Canada of reduced-cost benefits, e.g., for health care and because of reduced taxes associated with lower income levels, most agree that 100% replacement of pre-retirement income is not necessary to sustain the same living standard after age 65. However, what level is appropriate below 100% is not known. Table 2 lists replacement ratios provided through government pension plan systems in a wide range of countries in 1980. Canada scores at the lower end of the group. Much higher levels are generally provided in Western Europe and Japan than in North America. It should be noted as well that many of those countries with high ratios also have very advanced, comprehensive social service programmes providing services to the elderly. The replacement ratios presented here are for pre-tax income. Some countries do and others do not give tax relief to seniors and/or to pension income. So the ultimate impact of these post-retirement income levels on standard of living is less clear.

TABLE 2
REPLACEMENT RATES OF SOCIAL SECURITY OLD-AGE PENSIONS FOR WORKERS WITH AVERAGE WAGES IN MANUFACTURING AND FOR COUPLES, SELECTED COUNTRIES, 1980

Country	Pension as Percent of Earnings in Year Before Retirement	
	Single Worker	Aged Couple
Austria	67	68
Canada	41	49
Denmark	45	52
France	56	75
Federal Republic of Germany	55	49
Italy	62	69
Japan	57	61
Netherlands	61	63
Sweden	73	83
Switzerland	60	55
United Kingdom	47	47
United States	58	66

Source: Jonathan Aldrich, "The Earnings Replacement Rate of Old-Age Benefits in 12 Countries, 1960-80, Social Security Bulletin, November 1982, Vol. 45, No. 11.

METHODS OF ASSESSING THE EFFECTS OF INCOME AND AGE

This paper accepts the basic assumption underlying replacement ratios that dramatic downward shifts upon retirement are not necessarily desirable or acceptable. The question then arises of how to determine the levels of monetary resources which would be adequate for the elderly. Their age is given and, therefore, the changes this age factor might bring in expenditures is seen as more or less the 'given' component of the expenditure changes which come at age 65. Such age-related declines would fit the view of theorists who say that the elderly do less and want less and that is why expenditures decline, regardless of income. Income levels of the elderly, however, are alterable and are largely determined by government policies. Constraints that limitations of income impose on expenditures are a more or less involuntary component of the expenditure changes seen. They tell us what the elderly do, not because of declining needs and interests but because of declining means. A search for the answer to what are appropriate replacement ratios must sort out the influence of these two main factors. If age accounts for major drops in expenditures and income levels are unimportant, then there is less support for high income replacement levels after age 65. However, if age does little to explain differences in expenditures but incomes do, then it is clear that low incomes after retirement will dictate that rather drastic changes must be made in spending, regardless of desires to maintain pre-retirement levels of expenditures.

This paper also accepts the tenet that absolute income is not a complete, nor is it an accurate indicator of well-being. Consumption and expenditure patterns provide a more detailed and more revealing insight on lifestyles. They indicate how income is spent in maintaining a life pattern. Comparisons of trends over time and across groups with different characteristics can identify how income changes are dealt with and how relative positions are improving or deteriorating with economic shifts in income and income distribution. In particular, expenditure patterns analysis can more directly address the question as to how the needs of the elderly are being met. For example,

if increased income is being used to meet the fundamental food, clothing, shelter needs, then it is likely that there have been unmet needs in this area. However, if expenditures for 'necessities' level off and shift to more discretionary goods and services with increased income, then it is safer to conclude that a definite improvement in standard of living has occurred.

Of course, the ultimate decision as to whether or not the needs of any group are fully and adequately being met is not a data question but a judgment on the results of the data analysis.

Ideally, data on the same people before and after retirement is needed to determine changes accompanying retirement. However, such an ideal sample is not available. Rather, repeated cross-sectional studies over time must be substituted, and their limitations recognized.

To determine if age or income or some combination of the two is responsible for apparent differences in expenditure patterns of the elderly, several methods may be used. Three of these are:

(1) comparison of the expenditures of the elderly and the non-elderly at the same absolute income level;

(2) comparison of the expenditures of the elderly and the non-elderly at the same relative income level, e.g., with incomes in the same quantile of the income range; and

(3) by use of multi-variate analysis procedures which can handle the age and income factors at the same time as independent variables and note which is more important to explaining expenditure variances.

Each of the three methods has problems associated with its use and the interpretation of results. These difficulties will be discussed as each is presented. Because of these individual limitations, it is best to examine the results from all three methods simultaneously. Similarity of findings from the application of different procedures is the easiest to deal with in terms

of drawing final conclusions. If the different methods all point to the same conclusions, much more reliance can be placed on these conclusions. If the different methods lead to different conclusions, the interpretative step is trickier.

After a brief description of the data set, each of the procedures will be discussed, applied to the data and the results presented in the following three sections.

THE DATA SET

The data used for these analyses was collected by the Consumer Income and Expenditure Division of Statistics Canada in their periodic Surveys of Expenditures. The data subset used in this study consists of the expenditures on a wide range of goods and services of individual households consisting of one (unattached individuals) or two-adults only (married couples) with head 45 years of age and over. The sample for the original study was selected in a two-stage cluster sampling procedure. Weights were assigned to individual records to ensure that final estimates of averages were representative for the population of Canada. Data was collected for the survey years 1969, 1974, 1976, 1978 and 1982. For consistency across survey years and data sets, two measures were taken in this study:

(1) data was used only on the eight major cities consistently used throughout the study period.[1] They are St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver; and

(2) adjustments were made in the expenditure categories to make them consistent across survey years and as far as possible with the 1982 expenditure categories.[2] This will mean some expenditure categories may not total those noted in previous publications. However, year-to-year differences in this report will reflect actual expenditure shifts and not changes in the classification scheme.

Data for these surveys were collected in the first few months of the year following the survey year. In-home interview procedures with a detailed questionnaire were used, and the respondent was asked to recall or use personal records of expenditures to provide estimates.

EXPENDITURES ANALYSIS

FIXED INCOME COMPARISONS OF EXPENDITURES

Support for the argument that income (not age) is the constraining variable comes from studies where the expenditures of the elderly are examined controlling on absolute income levels. A study by the Consumer Income and Expenditure Division of Statistics Canada (Statistics Canada, 1980) compared 1974 expenditure levels of one and two-adult households with heads 45-64 and over 65 years of age. The report examined only those households within the income ranges of $3,000-7,999 for single individuals and $7,000-14,999 for married couples. The use of the fixed income range is an attempt to hold constant the effects of income, allowing age alone to be the explanation of differences in expenditures. However, in order to have an adequate sample size of both age groups with incomes in the determined income range, the range had to be set fairly wide. Within these ranges the older households clustered nearer the bottom of the range and the younger nearer the top. So within these groups total expenditures still averaged $1,578 lower for those in the older couples group than those in the younger couples groups and were different by $1,051 between older and younger single person households.

The main expenditure groups accounting for these differences were higher expenditures by the younger households on food, smoking and alcoholic beverages, travel and transportation, personal taxes and securities (see Table 3). However, gifts and contribution levels were higher for the older group. These results can be seen by comparing column 1 with 3 and column 4 with 6 in Table 3.

TABLE 3
FAMILY EXPENDITURES BY AGE OF HEAD, 14 CITIES,
UNATTACHED INDIVIDUALS AND MARRIED COUPLE FAMILIES, 1974

	Unattached Individuals With Income $3,000 to $7,999 by Age of Head			Two Adult Married Couples With Family Income $7,000 to $14,999 by Age of Head		
	45-64 Years (actual data)	45-64 Years (reweighted data)	65 Years and Over (actual data)	45-64 Years (actual data)	45-64 Years (reweighted data)	65 Years and Over (actual data)
Average Dollar Expenditure						
Food	1,168.2	1,154.9	1,020.6	1,909.0	1,893.8	1,794.4
Shelter	1,345.8	1,247.6	1,435.3	1,632.3	1,535.9	1,631.7
Rented living quarters	743.0	705.5	848.8	576.0	491.6	501.3
Owned living quarters	379.8	316.3	346.5	647.2	623.8	613.5
Other housing	33.9	35.5	31.7	75.5	82.6	142.5
Water and fuel	189.1	190.2	208.3	333.6	330.8	374.4
Household operation	266.3	249.8	257.4	351.9	331.0	394.0
Furnishings and equipment	250.3	252.8	182.7	507.4	516.8	475.2
Household appliances	39.9	49.5	27.0	81.9	90.1	85.8
Other	210.4	203.3	155.7	425.5	426.7	389.4
Clothing	411.8	358.1	249.4	525.9	501.6	508.9
Personal care	150.5	139.7	103.6	205.7	189.8	191.3
Medical and health care	143.1	122.7	121.8	229.9	222.6	260.5
Smoking and alcoholic beverages	263.9	243.0	141.7	530.4	511.7	253.4
Travel and transportation	417.0	347.8	338.9	1,502.7	1,492.6	1,119.2
Automobile and truck	233.6	173.6	171.6	1,327.0	1,331.8	837.2
Purchase	75.3	45.3	51.1	684.0	708.7	315.8
Operation	158.3	128.2	120.5	643.0	623.0	521.5
Other	183.4	174.2	167.3	175.7	160.8	282.0
Recreation	185.7	154.1	210.0	312.7	280.5	341.9
Reading	49.7	44.0	44.1	56.3	50.3	72.0
Education	1.6	.9	.1	3.2	2.6	1.5
Miscellaneous expenses	108.9	108.7	98.9	174.4	164.8	88.7
Total current consumption	**4,762.8**	**4,424.2**	**4,204.6**	**7,942.0**	**7,697.9**	**7,132.8**
Personal taxes	605.8	425.2	272.3	1,797.3	1,584.0	1,146.8
Security	213.2	159.2	17.7	609.5	523.2	210.6
Gifts and contributions	211.6	183.2	247.8	281.3	247.5	566.7
Total Expenditure	**5,793.4**	**5,191.7**	**4,742.3**	10,630.1	**10,052.8**	**9,056.9**

Source: Statistics Canada (1980), "Expenditure Patterns and Income Adequacy for the Elderly, 1969-1976", Catalogue Number 13-575, p. 10-11.

The report then goes on to compare these same groups by applying "a simple standardization technique ... to produce better income comparability of the two age groups and the 45-64 group of married couples is reweighted so that component income classes have the same weight as in the 65 and over age group" (Statistics Canada, (1980), p. xxii). They note as the result of this adjustment to compare those with like incomes that "after standardizing for income the difference between the two age groups for these basic categories (food, shelter and clothing) has been practically eliminated". These reweighted results of the 45-64 year-old age group can be seen in columns 2 and 5 of Table 3.

The income difference is reduced to only $86 and total expenditure differences between the older and younger groups decline to only $449 for single person households and $996 for the two-person households. Similarly, differences in expenditures on the basics of food, clothing and shelter between the younger and older households declined from $221 to $55 for single persons and $132 to $-4 for couples.

Such comparisons are fraught with difficulties. Because of the selection of a specific middle income range for analysis, those age subgroups which are compared may be very different from and no longer well represent the larger group from which they were drawn. For example, higher income senior households often contain a spouse who still works and have a higher incidence of homeownership. Therefore, the results cannot be relied upon to adequately answer the question of whether age or income determines living standards across the entire population of seniors. However, they can add one piece to the complex puzzle. Also, comparisons of fixed income groups do not easily allow for studies of changes over time when incomes of the general population are changing.

RELATIVE INCOME COMPARISONS

It is difficult to use fixed income groups for comparisons over years if average incomes are increasing quickly as they did in the 1970's. An alter-

nate approach is to look at income quantiles of some size. With some stability in distributions of household types within the income ranges, the relative position of the elderly over time can be tracked. Because the sample sizes of elderly in the Expenditure Surveys are small, income thirds are the smallest quantiles that can be effectively examined.

In the 1980, Statistics Canada publication on expenditures of the elderly, income thirds were used to examine 1969 and 1974 expenditures. It was noted that the lowest income groups of the elderly consumed a very high proportion of their total expenditures, i.e., relatively little went to taxes, security, gifts and contributions or savings. Also, only those elderly in the upper income group had any significant expenditures on travel, domestic help, cleaning and personal care services.

A similar approach was taken for this paper in examining the entire set of six years' data from 1969 to 1982. Both single and two-person households were combined to increase subsample sizes, then divided into groups by income thirds for each year. Of course, the income ranges of these thirds varied from year to year. Comparisons were made by age of household head. The results for some selected major expenditure categories are presented in Table 4. Although some differences do remain between the age groups at any income level, what is most striking is the similarity of levels of expenditures regardless of age, especially among those in the middle income third.

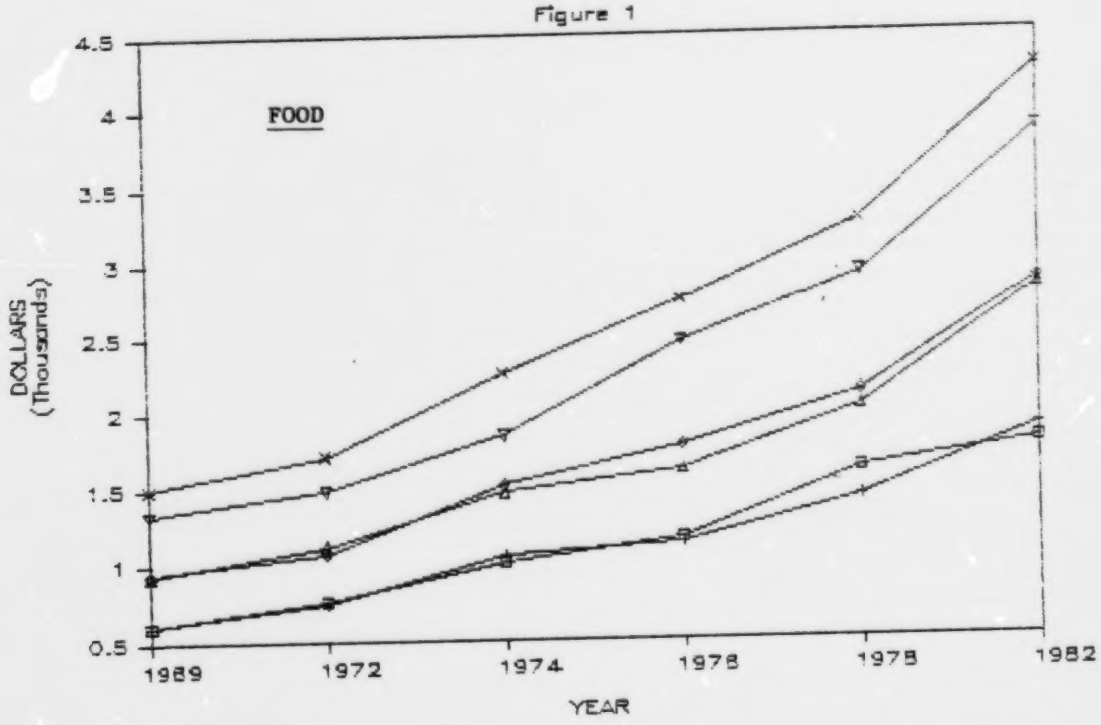
The dollar differences seen in the Table 4 are relatively small, usually less than 10%. Any larger gaps are not consistently maintained from one survey year to the next. These results are graphed in Figures 1-5. The distinctions across the three income groupings and the similarities of the two ages within the income groupings is quite evident. Regardless of age, those with the same income groupings spend similarly. Also, the similarities of year-to-year shifts suggest that factors affecting the income groupings are more pronounced in impact than are the factors affecting the different age groupings.

TABLE 4
DOLLAR EXPENDITURES OF ONE AND TWO-PERSON HOUSEHOLDS ON SELECTED CATEGORIES OF GOODS AND SERVICES BY INCOME THIRDS AND AGE, 1969-1982

Expenditure Category	Year	By Income Thirds					
		Lower Third		Middle Third		Upper Third	
		45-64	65+	45-64	65+	45-64	65+
Food	1982	1,782	1,882	2,863	2,817	4,271	3,845
	1978	1,610	1,423	2,117	2,016	3,266	2,911
	1976	1,164	1,132	1,768	1,615	2,730	2,448
	1974	1,005	1,049	1,515	1,466	2,255	1,840
	1972	754	741	1,069	1,122	1,713	1,482
	1969	608	608	938	936	1,506	1,331
Shelter	1982	2,346	2,549	3,823	3,671	5,160	5,627
	1978	1,883	1,770	2,477	2,431	3,581	3,631
	1976	1,543	1,370	1,946	1,955	3,022	3,389
	1974	1,002	1,163	1,519	1,435	2,085	2,293
	1972	833	856	1,224	1,363	1,818	1,939
	1969	778	721	1,041	1,116	1,586	1,501
Clothing	1982	338	337	845	723	1,748	1,285
	1978	249	320	689	516	1,417	1,488
	1976	288	222	594	490	1,286	980
	1974	200	217	469	368	950	697
	1972	157	158	339	296	759	643
	1969	140	136	345	244	782	536
Transportation	1982	676	578	2,221	1,814	4,286	3,176
	1978	570	381	1,177	1,002	2,575	1,985
	1976	280	211	982	866	2,236	2,242
	1974	146	192	833	673	1,823	1,089
	1972	245	112	535	394	1,460	851
	1969	122	91	515	338	1,167	726
Total Current Consumption	1982	6,743	6,953	13,712	12,366	23,787	19,303
	1978	5,846	5,069	9,153	7,805	16,023	13,944
	1976	4,216	3,832	7,560	6,821	13,747	12,991
	1974	3,057	3,445	5,996	5,327	10,368	8,436
	1972	2,525	2,464	4,494	4,322	8,163	7,400
	1969	2,150	1,986	3,964	3,650	7,352	6,115

EXPENDITURES OF UNATTACHED INDIVIDUALS AND MARRIED COUPLES BY INCOME THIRDS

Figure 1

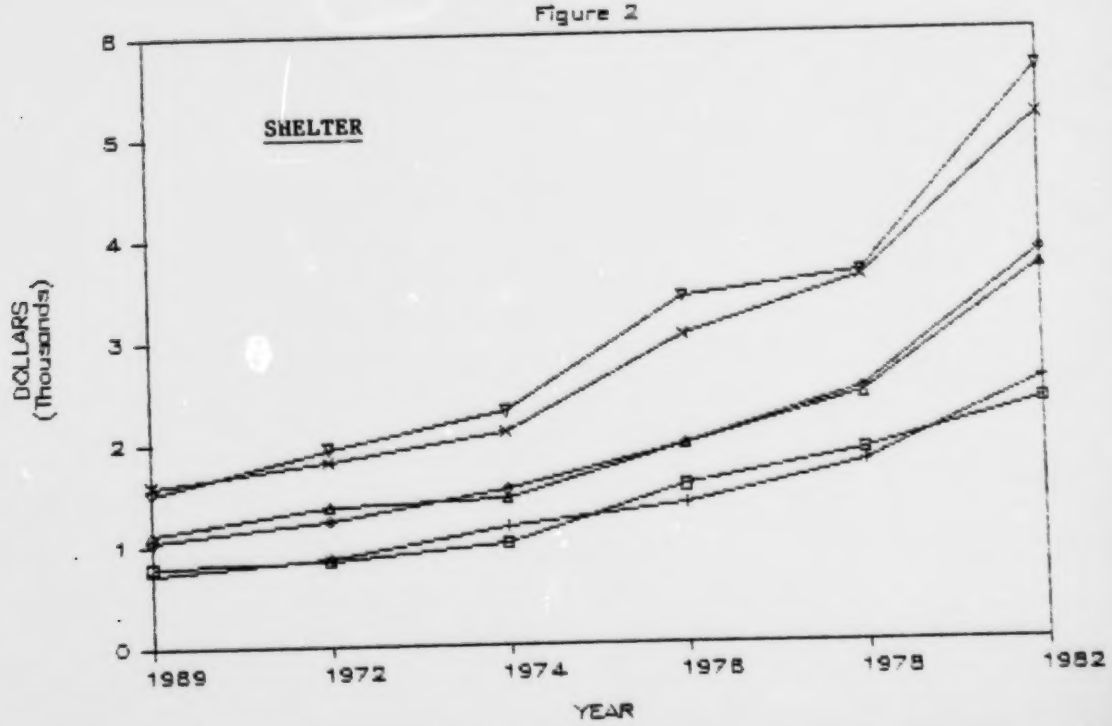


UPPER INCOME THIRD 45-64 X over 65 ▽

MIDDLE INCOME THIRD 45-64 ◊ over 65 △

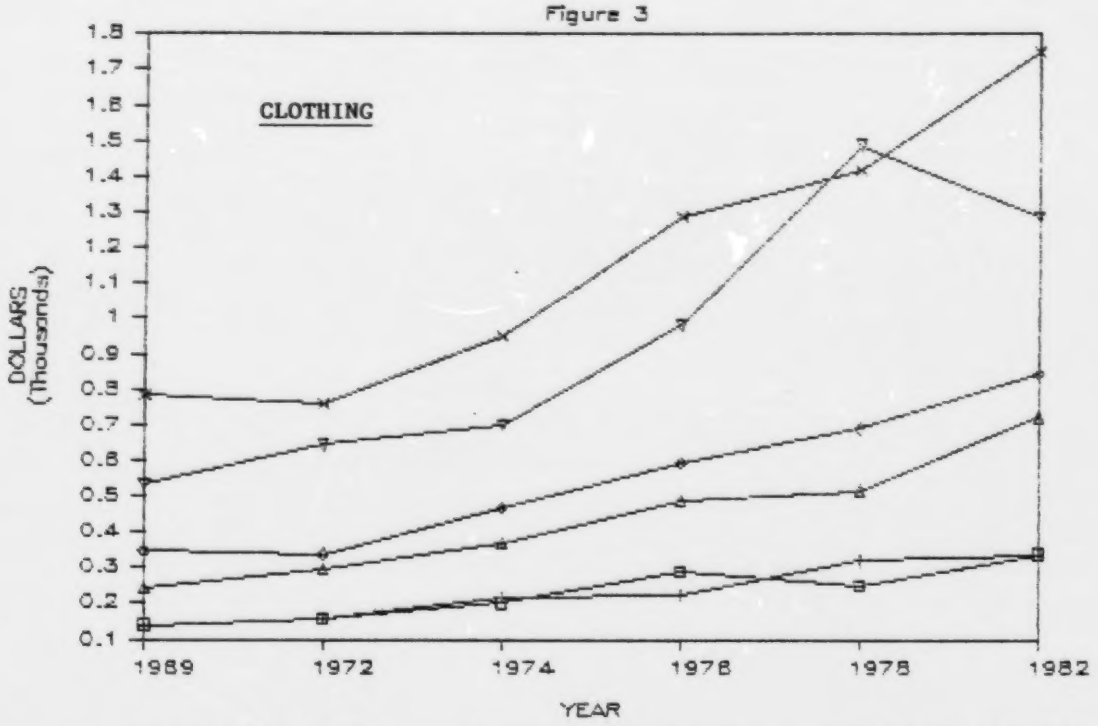
LOWER INCOME THIRD 45-64 □ over 65 +

Figure 2



EXPENDITURES OF UNATTACHED INDIVIDUALS AND MARRIED COUPLES BY INCOME THIRDS

Figure 3

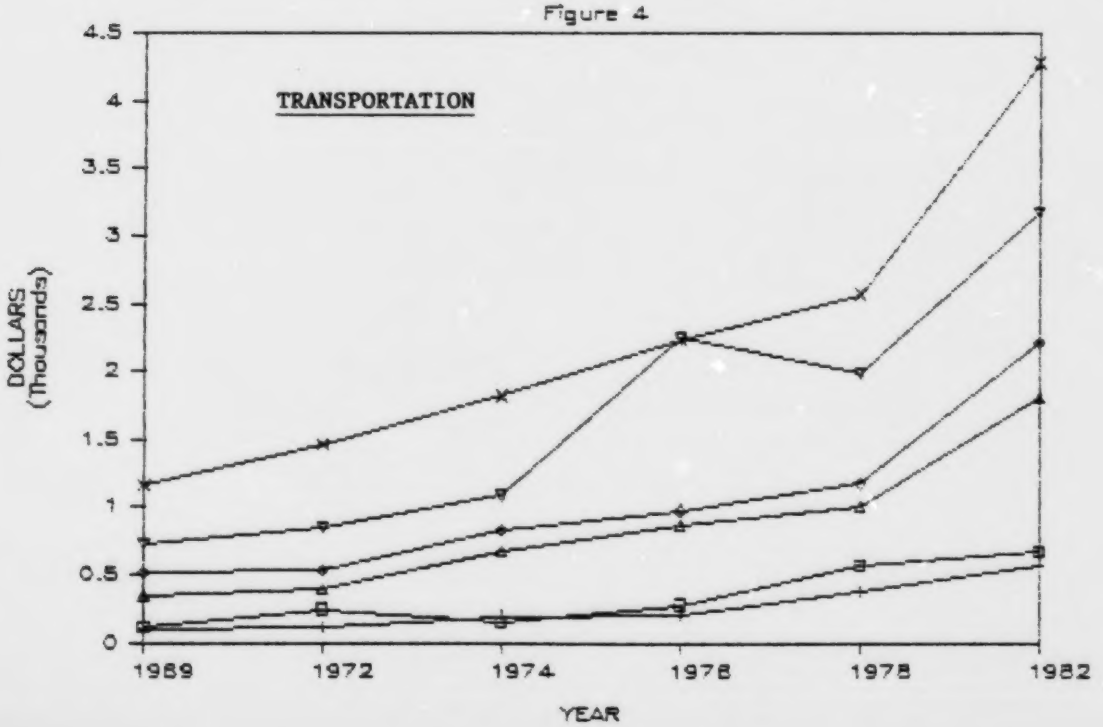


UPPER INCOME THIRD 45-64 x over 65 ▽

MIDDLE INCOME THIRD 45-64 ◊ over 65 △

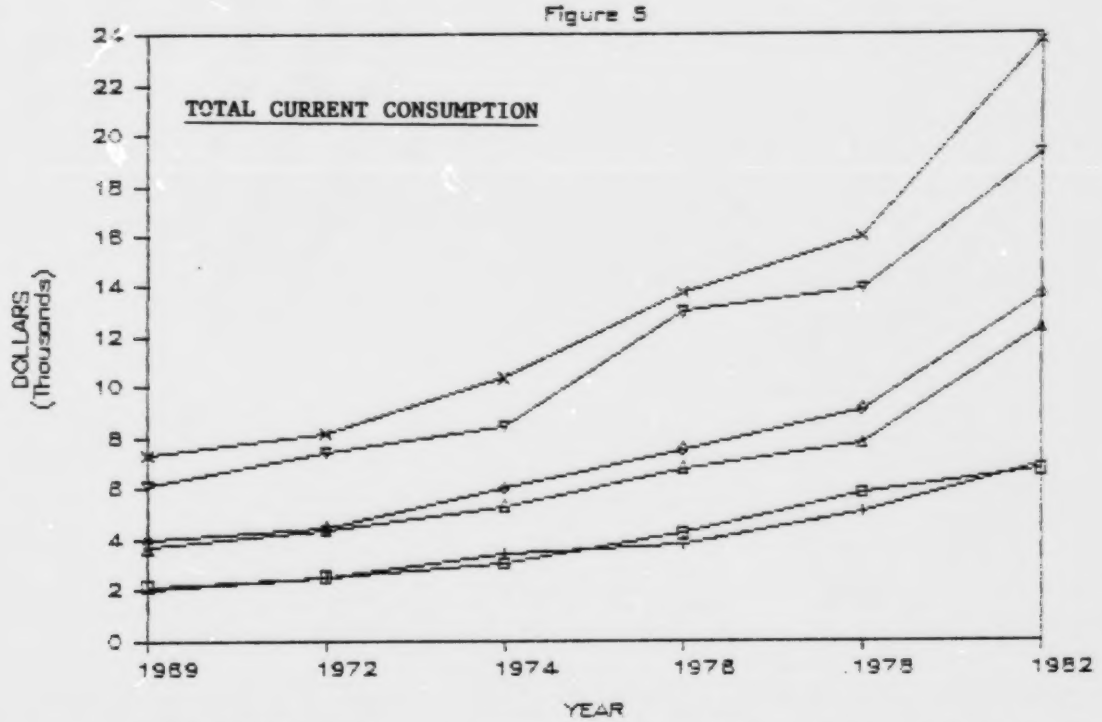
LOWER INCOME THIRD 45-64 □ over 65 +

Figure 4



EXPENDITURES OF UNATTACHED INDIVIDUALS AND MARRIED COUPLES BY INCOME THIRDS

Figure 5



UPPER INCOME THIRD
45-64 x over 65 ▽

MIDDLE INCOME THIRD
45-64 ◊ over 65 △

LOWER INCOME THIRD
45-64 □ over 65 +

Over time, and as a proportion of expenditures on the category, the small disparities that do exist between the age groups appear to be closing, probably because the relative position of the elderly households within the income groups is improving. This improvement is least seen in the upper third. The largest differences in expenditures between age groups are seen at the upper level. The gains of the elderly are relatively limited at the top of the income range. The incomes of the younger group continue to outstrip those of the elderly at the upper end. The elderly are closing the income gaps only with those on more modest incomes.

Again, there are problems with these types of comparisons. Income thirds can be very wide, and different age groups may be distributed differently across the range. Sample sizes tend to be small for the single person elderly in the highest third and for the younger couple households at the bottom level reducing the dependability of estimates. However, both this study and the earlier income thirds study of expenditures of the elderly only (Statistics Canada, 1980) with their different approaches both conclude that at similar income levels there is a great deal of equivalence between the expenditure levels of the older and middle-aged groups. No abrupt drops in expenditures can be expected at age 65 due to age alone. Those seen are likely highly related to the concurrent drop in incomes experienced by most households as the male head reaches age 65.

REGRESSION - BASED ANALYSIS APPROACH

As was seen in the previous two sections on absolute and relative income group analyses of expenditures, the elderly seem to differ little from younger households of similar size. However, sample size constraints have been a problem for these studies, making it necessary to use broad income groupings. Further, the influence of other variables known to affect household expenditures, such as family size and region, cannot all be included in cross-classification studies again because of sample size constraints. The logical alternative analysis approach of regression procedures can prove useful, allowing for the inclusion and determination of the relative impacts of income and age as well as other factors likely to be important in determining living levels.

Regression Techniques for Use with the Survey of Consumer Expenditures

The Consumer Income and Expenditure Surveys use samples drawn from the Labour Force Area Sampling Frame. The sampling procedure is of the stratified cluster sampling type. It also involves disproportionate sampling of smaller cities in order to ensure the reliability of city estimates. In developing total estimates, individual records are weighted to restore to each city its appropriate importance in the total and compensating for any variability in response rates between cities as well as variable sampling ratios.[1]

Because of the cluster sampling procedures used, the assumptions of independence of observations made for ordinary regression analyses are violated. Kish and Frankel (1970) suggested that with large samples the regression coefficients themselves that arise from the use of normal regression procedures of data from complex (correlated) samples tend to approach a normal distribution about the corresponding parameters. It is, however, the variance estimates which are more problematic. With the usual regression procedures they are likely to be underestimated, thus affecting the validity of tests of statistical significance.

Several modified regression techniques have been suggested and used to deal with these problems including balanced repeated replications, jackknife, Taylor linearization and, more recently, bootstrap procedures. The first two tend to be very time consuming and expensive operations because of the high number of iterations required. The Taylor linearization procedure has been chosen as an equally effective and less costly alternative.

The problem of variance estimation for the regression coefficients is solved "by finding a linear approximation to the estimator of the coefficients. This approximation is then used to derive an approximation of the variance" (Holt, 1977, p. 5). The linearization technique used is the Taylor series expansion of the estimator.[3] The regression results discussed in the following sections have used this procedure with sample weights included as derived from the original data set.

The Variables in the Regression Models

The regression model used here includes the following variables:

(1) Total expenditures - This variable is being used as a substitute for the income effect frequently discussed for several reasons. The expenditure data collected for the Consumer Expenditure survey is collected in a careful and detailed way. Less emphasis is placed on the income data. From a theoretical perspective, using total current expenditures allows expenditures on categories of goods and services to be viewed within the perspective of total allocations of monies to this function. Finally, analysis of total expenditures allows one to disregard whether monies for these were derived from current income or from dissavings which may frequently be the case for the elderly. Savings and dissavings (changes in current assets and liabilities) are the primary difference between current income and total current expenditures. The current flow of resources for expenditures is the basis of analysis.

(2) Size of household - The sample includes both married couples and single individuals. As it can be anticipated that larger households would have larger needs, particularly for non-durable goods, this household size variable is included.

(3) Age is incorporated as two dummy variables. Three age categories were developed to reflect the theoretical ranges where life courses changes might be expected - 45-64, 65-74, 75 and over. The first range was the middle age group closest to the most common retirement age of 65, and used in the model as the omitted, base or comparison condition. The values of the coefficients for the other two age categories reflect their divergence from the younger age group. Within the seniors group, the division reflects a commonly used separation of the young-old and the old-old. Many studies and reviews have suggested that declining activi-

ties and health are far more common for the older of these two groups, while little change is seen before age 75 for most people. Other studies (Wilkins and Adams, 1984, Table 4.1) reveal rather distinct drops separating all three of these age groups from each other and from the younger population. The use of the dummy variable series allows for distinct differences among these groups to be identified and frees the analysis from the assumption of a single linear relationship of age to consumption. The policy implications of differences within the elderly population can be identified.

(4) City - Here handled as a set of dummy variables, with the largest city, Toronto, used as the omitted, base or reference condition. Bairstow (1973) noted large differences between provinces and cities in the proportion of their populations that were elderly. In particular, British Columbia, Saskatchewan, Manitoba, Nova Scotia and Prince Edward Island have relatively high proportions of elderly. He noted the effect of such aged populations on the ability to offer subsidized housing and other services to seniors based on the income tax base. Moreover, the elderly in the Maritimes were noted as being the poorest in both 1961 and 1971. The elderly in Quebec were the second poorest group. On the other side, British Columbia, along with Ontario elderly, were the least poor, even though Vancouver had a very high proportion of elderly. The inclusion of municipality of residence allows for the consideration of all the local factors such as regional variations in price levels and the availability of support services often supplied by the municipality. The importance of the inter-city variances can be assessed. If they are important, a regional approach to support of the elderly is the most relevant policy direction. If they are not, a national approach is needed.

The regression model to be tested across the six years takes the form

$$E_i = a + b_1 (TE-E_i) + b_2 (HS) + b_{3,4}(A') + b_{5-9} (C')$$

where E_i = expenditures on a category of goods and services, i

$a, b_1\text{-}b_9$ = parameter estimates

$TE\text{-}E_i$ = total expenditures for the household minus the expenditure on the category identified as the dependent variable

HS = household size of 2 (one person households being the omitted condition)

A' = dummy variable set for age where
A_1 = 65-74
A_2 = 75 and older
and the omitted condition is age 45-64

C' = dummy variable set for city where the omitted condition is Toronto and

C_1 = St. John's
C_2 = Halifax
C_3 = Montreal
C_4 = Ottawa
C_5 = Winnipeg
C_6 = Edmonton
C_7 = Vancouver

Two forms of the expenditure data were analyzed. In the first, dollar values of expenditures were used, and in the second, the proportions spent on the category of total expenditures were used as the dependent variables.

The categories of expenditures analyzed and presented here are:

- total food
- total shelter
- rented living quarters (for those whose major shelter expenditure was for rented living quarters)
- owned living quarters (for those whose major shelter expenditure was for owned living quarters)
- clothing

- transportation
- direct energy costs (in-home heating and electricity and automobile fuel costs)

Results

Tables in the Appendix present the results for each dependent variable for all survey years. Almost all of the models are statistically significant. The only set which are not are for clothing after 1969. Significant variables in the models are indicated by letter referring to their level of significance. The tables and sections following will summarize these results in terms of the total explanatory ability of the models and in terms of the usefulness of the variables in the models in general and over time.

The Strength of the Model

There is no doubt that the set of independent variables chosen was a useful set. Table 5 presents the adjusted R^2 values for each year for each of the dependent variables. The models perform best in explaining dollar expenditures on food, rented living quarters and clothing. They perform less well for owned living quarters, transportation and direct energy. The latter group involves capital goods usage as opposed to the consumption of less durable goods involved in the first group. So, variances in the first group are best explained by current expenditure levels and current household size. The capital-related expenditures would probably be better understood with additional information in the model regarding long-term or permanent income, wealth and maximum household size (probably attained at an earlier period by the households in these studies).

Variations in budget proportions are less well explained than dollar expenditures. This is likely a restriction inherent in the form and range of the dependent variable itself. It may be simply easier to explain variance in the distribution of the dollar values than in the percentage figures which are

TABLE 5
ADJUSTED R^2 FOR REGRESSION MODELS

Year	1969		1972		1974		1976		1978		1982	
Dependent Variable Form	Dollar Expenditures	% of Total Expenditures	Dollar Expenditures	% of Total Expenditures	Dollar Expenditures	% of Total Expenditures	Dollar Expenditures	% of Total Expenditures	Dollar Expenditures	% of Total Expenditures	Dollar Expenditures	% of Total Expenditures
Category of Expenditures												
Food	.63	.37	.58	.44	.45	.44	.65	.33	.50	.39	.48	.25
Shelter	.36	.36	.34	.34	.28	.28	.29	.29	.24	.24	.25	.25
Rented Living Quarters	.08	.19	.09	.29	.11	.29	.11	.30	.12	.23	.11	.25
Owned Living Quarters	.19	.04	.21	.08	.19	.08	.19	.08	.16	.05	.15	.04
Clothing	.52	.10	.50	.08^{ns}	.43	.06^{ns}	.47	.05^{ns}	.43	.05^{ns}	.41	.05^{ns}
Transportation	.17	.04	.19	.05	.15	.02	.19	.02	.15	.03	.17	.02
Direct Energy	.24	.23	.33	.19	.30	.17	.18	.18	.25	.25	.25	.20

All models had significant F tests at $\alpha < .001$ except those marked ns.

constrained to the range of 0-100 with less likelihood of approaching a normal distribution. However, what can be concluded is that the explanatory variable set is more useful in accounting for variance across households in how much is spent on a category of goods or services than what proportion of the budget is allocated to that category. This is especially true for clothing expenditures where absolute dollar levels are rather well handled by the model, but virtually no information is supplied to explain variances in percentage expenditures.

A note should also be made of trends over in time the summary measure of the model's ability to explain variance in the expenditures, i.e., in the R^2's. The general trend is downward with the highest levels being often in 1969. The downward trend is occasionally interrupted by a high year in the early to mid-seventies, but every R^2 in 1982 is below the 1969 R^2. Except for energy, they are down a large amount. The model seems to be losing its ability to explain the variance in expenditures on specific goods and services. This is true both for categories which are termed "necessities" like food, clothing, and shelter, and for those which are more discretionary, like transportation. It can be suggested that individual factors not considered in the model are contributing to the decreasing R^2. It may be that rising discretionary incomes are providing more leeway to allow individual households to alter expenditures on various categories of goods and services. A declining R^2 may be considered then as an indicator of increasing freedom of choice, a general improvement in life quality.

Importance of Model Elements

(a) The "age vs. income" controversy - In order to address the question directly as to whether age or income is more determinant of living standards, two sets of regression models which contain the same model elements are compared next. The two models differ only in the order in which the independent variables are allowed to enter in a step-wise manner. In Model 1, the total expenditures variable (expenditures for the category of goods or services under consideration) enters first, then household size, then the age dummies enter together and finally the set of city dummies. In Model 2, the age dummies enter together first, then

household size, then total expenditures and finally city dummy variables. The increment in adjusted R^2 is the basis for comparison. It tells how much additional information is provided by the added independent variables after the other variables are taken into account. If there is any correlation within the independent variable set, any given variable entered first will account for more of the variance of the dependent variable and increase the adjusted R^2 more than if it is entered later after the other variable(s) with which it is correlated. Age and total expenditures are related. We know that total expenditures decline with age. So if age is entered after total expenditures, their overlap in ability to explain variance in the dependent variable will have already been totally ascribed to expenditures. The same is true if their order is reversed. Since this correlation is impossible to separate and is the reality of the situation, the two models approach has been used. Each of the two variables has its "best shot" - total expenditures in Model 1 and age in Model 2. Table 6 presents the increment in adjusted R^2 for the first three variables in each of the two models for seven expenditure categories for 1982. The data for Model 1 should be read from left to right and for Model 2 from right to left. Since city designation is not an issue here, the data set used is for all of Canada, not just major urban centres. The same patterns of results emerged for all the other years, so for simplicity only one year is reported.

Despite the order of entry into the model, the expenditure level variable exceeds age in ability to explain variance in individual expenditures and thus increase adjusted R^2. Only for transportation expenditures for Model 2 does the R^2 increment for age exceed that of expenditures. It is in this transportation area that age has its largest effect. However, if expenditures enter first (Model 1) age adds very little. Age is a non-significant variable, in fact, in two situations - Model 2 for rented living quarters and model 1 for direct energy expenditures. So, in the clearest piece of evidence so far, the importance of total expenditures (indicating a flow of monetary resources) over age is confirmed as the more important determinant of expenditures for virtually all major categories goods and services.

TABLE 6
INCREASE IN ADJUSTED R^2 WITH VARIABLE ENTERING MODEL
UNDER 2 MODEL CONDITIONS

1982 EXPENDITURE DATA

Dependent Variable		Independent Variable: Total Expenditures	Household Size	Age	
Total Food	Model 1 →	.3118	.1267	.0098	
		.1517	.2177	.0789	← Model 2
Total Shelter	Model 1 →	.1936	.0011	.0018	
		.1419	.0229	.0317	← Model 2
Owned Living Quarters	Model 1 →	.0841	-.0018^{ns}	.0092	
		.0606	-.0013^{ns}	.0322	← Model 2
Rented Living Quarters	Model 1 →	.1928	-.0005^{ns}	.0145	
		.1659	.0442	-.0033^{ns}	← Model 2
Clothing	Model 1 →	.3305	.0189	.0037	
		.2167	.0775	.0589	← Model 2
Transportation	Model 1 →	.1112	.0427	.0192	
		.0467	.0682	.0582	← Model 2
Direct Energy	Model 1 →	.0773	.0682	.0000^{ns}	
		.0316	.1026	.0113	← Model 2

Note: All coefficients are significant at $\alpha < .05$ except where indicated by ^{ns}.

Further analysis of Table 6 reveals that the total expenditures variable is most important for food and clothing categories. As earlier noted, these ongoing expenditures are more readily handled by the model elements included here. Also, household size is most helpful in explaining total food expenditures. Having two people in the household will have its greatest impact in terms of variations in food expenditures. However, it has no effect on expenditures on owned living quarters.

(b) Changes over Time

In this section, changes over time in the outcomes of the regression model analysis are examined for trends in factors affecting the living standards of the elderly. This is done for purposes of this paper to ensure that no major trends are evident that might alter conclusions drawn in the previous section concerning the importance of money flows. Also, it will deal with possible moderating effects of additional variables that have been suggested as important.

Tables 7 to 13 present the regression results for the seven categories of goods and services for dollar expenditures by year.

Significant parameter estimates are indicated by letters.

(i) The intercept term in theory suggests some absolute minimum of expenditures, when there are no other expenditures (for the single person, 45-64 years of age, living in Toronto). Deviations from this condition are indicated by the coefficients or parameter estimates associated with the independent variables. As can be noted for most categories of goods and services, the intercept term climbs every year indicating rising costs of 'the minimum'. Specific years of particularly large jumps are 1974 and 1978 for food; 1976 for shelter and rented living quarters, 1982 for shelter and owned living quarters; 1982 for clothing; 1976 and 1982 for transportation; and 1982 for direct energy. Both transportation and clothing have some years with non-significant (zero) or negative coefficients. This would suggest that these items are less central to budgets and are more discretionary. In theory, for some range of low total expenditures, nothing will be spent on clothing and transportation.

(ii) Total expenditure levels have already been identified as important. The parameter estimates indicate how much the expenditures on the category of goods or services will increase above the

TABLE 7
REGRESSION MODEL RESULTS FOR TOTAL FOOD EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.63	.58	.45	.65	.50	.48
F-Value	152.2	103.7	88.2	141.4	74.9	81.7
Intercept	180.3*	213.8*	446.7*	192.2	552.2*	656.4*
Total Expenditures	.067*	.071*	.061*	.069*	.071*	.038*
Age - 65-74	-64.4*	-111.2*	-154.5*	-109.2	-93.7	-215.0
- 75+	-122.8*	-42.1	-269.2*	-191.4	-238.1*	-363.2*
Household Size	388.8*	4.2*	5.1*	6.7*	6.8*	1319.6*
City - St. John's	-10.1	86.5	-40.8	26.9	-179.6	-175.6
- Halifax	-117.0	-147.7*	-274.8	-141.4	-341.8*	-418.4*
- Montreal	12.7	23.9	63.8	142.9	111.7	-286.6*
- Ottawa	18.3	-143.5*	-64.6	-182.0	-238.1	-396.0
- Winnipeg	-48.5	-78.3	-132.8	27.6	-77.5	-259.5*
- Edmonton	-105.4*	-99.4*	-103.0	-47.5	-298.0*	-109.2
- Vancouver	-6.2	55.1	52.5	43.5	-157.0	-159.1

TABLE 8
REGRESSION MODEL RESULTS FOR TOTAL SHELTER EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.36	.34	.28	.29	.24	.25
F-Value	777.8	171.0	237.2	137.2	267.6	339.3
Intercept	469.3*	1072.3*	1128.5*	1720.7*	1664.1*	2380.5*
Total Expenditures	.108*	.085*	.069*	.072*	.073*	.084*
Age - 65-74	-32.1	-55.3	-203.6*	-107.2	-470.7*	-667.5*
- 75+	29.7	-55.5	-187.8*	-207.4*	511.8*	-612.3*
Household Size	-.0018	.26*	.812*	1.0*	.81*	147.5*
City - St. John's	61.9	-344.8*	20.1	546.3*	192.2*	-411.7*
- Halifax	179.4*	-26.8	-11.4	-359.6*	429.6*	51.5
- Montreal	187.4*	-270.6*	-161.1*	-556.1*	-19.4	35.3
- Ottawa	238.6*	65.7	192.6*	63.6	647.5*	642.7*
- Winnipeg	6.1	-437.7*	-254.6*	-573.7*	9.0	-13.1
- Edmonton	81.5	-286.2*	-213.3*	-382.6*	470.2*	877.9*
- Vancouver	95.5*	-104.3	150.5	-64.2	596.2*	1062.4*

TABLE 9
REGRESSION MODEL RESULTS FOR RENTED LIVING QUARTERS EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.08	.09	.11	.11	.12	.11
F-Value	126.2	32.2	77.9	43.1	114.1	118.9
Intercept	616.6	1347.3	1380.6	1951.9	1624.7	2323.5
Total Expenditures	-.0014	-.015	-.018	-.016	-.015	-.018
Age - 65-74	-260.4	-452.8	-472.9	-595.7	-625.9	-892.3
- 75+	-233.4	-432.2	-496.8	-593.8	-723.5	-824.9
Household Size	-62.1	-1.0	-1.2	-1.8	-1.8	-230.9
City - St. John's	4.6	-365.4	-165.6	-456.7	-175.7	-64.4
- Halifax	222.6	24.5	142.3	29.6	428.9	759.0
- Montreal	295.9	-50.9	91.2	-96.2	385.5	473.9
- Ottawa	301.8	19.9	249.3	240.9	479.6	721.8
- Winnipeg	30.0	-338.3	-141.7	-345.4	35.6	329.5
- Edmonton	144.3	-117.2	18.0	-47.5	475.9	982.4
- Vancouver	111.7	-140.9	28.2	-79.0	333.7	895.9

TABLE 10
REGRESSION MODEL RESULTS FOR TOTAL OWNED LIVING QUARTERS EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.19	.21	.19	.19	.16	.15
F-Value	313.6	85.8	146.0	77.2	165.8	174.8
Intercept	-97.2	-170.7	-83.9	-4.7	39.2	59.2
Total Expenditures	.056	.053	.040	.039	.044	.050
Age - 65-74	73.6	217.0	35.3	143.0	-190.6	-269.8
- 75+	84.3	171.9	39.5	-10.6	-129.9	-292.8
Household Size	54.9	1.3	1.9	2.8	2.4	334.1
City - St. John's	-153.7	-189.7	-23.9	-401.9	-225.9	-516.4
- Halifax	-32.3	-121.0	-234.3	-481.2	-52.2	-608.8
- Montreal	-103.8	-286.1	-367.6	-593.0	-404.6	-433.7
- Ottawa	71.2	-76.5	-28.2	-229.1	290.5	60.6
- Winnipeg	41.0	-89.1	-69.3	-266.0	49.9	-210.3
- Edmonton	55.9	-115.4	-121.2	-280.9	254.2	123.0
- Vancouver	21.6	-6.4	98.2	34.3	378.8	437.4

TABLE 11
REGRESSION MODEL RESULTS FOR TOTAL CLOTHING EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.52	.50	.43	.47	.43	.41
F-Value	1475.4	322.6	462.1	301.0	654.3	700.8
Intercept	-79.9	-38.9	13.7	-144.2	-164.4	-114.0
Total Expenditures	.081	.064	.057	.071	.063	.049
Age - 65-74	56.0	-71.5	-98.1	-92.5	-49.3	-179.1
- 75+	-69.1	-115.7	-172.1	-145.9	-73.8	-173.2
Household Size	61.2	.88	1.0	1.1	1.4	197.0
City - St. John's	54.5	20.7	-68.6	-123.6	-74.3	108.5
- Halifax	4.4	-57.8	5.5	-54.9	-29.5	24.6
- Montreal	14.3	29.8	110.0	82.8	141.8	188.2
- Ottawa	-7.7	-30.9	109.6	-109.0	17.7	47.4
- Winnipeg	12.5	2.0	4.0	-32.5	-36.4	41.3
- Edmonton	19.1	27.5	44.7	23.5	33.7	141.3
- Vancouver	-56.9	-89.9	-154.1	-212.2	-171.2	-63.7

TABLE 12
REGRESSION MODEL RESULTS FOR TOTAL TRANSPORTATION EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.17	.19	.15	.19	.15	.17
F-Value	274.8	76.8	109.7	78.7	156.3	198.8
Intercept	442.1	415.1	471.4	379.8	660.9	945.7
Total Expenditures	.089	.086	.074	.086	.086	.077
Age - 65-74	-258.8	-379.8	-325.0	-236.0	-73.1	-353.8
- 75+	-497.0	-488.9	-607.9	-555.6	-760.0	-1006.3
Household Size	1.2	.38	.76	1.1	1.6	214.8
City - St. John's	-192.1	60.8	407.4	111.1	-279.5	173.4
- Halifax	6.8	28.4	140.7	315.4	-72.9	396.7
- Montreal	-103.4	-256.9	-29.4	-2.1	-373.6	-107.0
- Ottawa	-85.6	-80.3	-144.4	161.2	-294.7	-391.4
- Winnipeg	-33.4	-124.7	-48.3	45.2	-325.5	44.1
- Edmonton	164.3	59.0	228.9	417.3	99.2	167.5
- Vancouver	47.1	32.6	133.8	115.1	-174.3	74.9

TABLE 13
REGRESSION MODEL RESULTS FOR TOTAL DIRECT ENERGY COSTS EXPENDITURES FOR ONE- AND TWO-PERSON HOUSEHOLDS WITH HEAD OVER 45 YEARS OF AGE, 1969-1982

	Parameter Estimates by Year					
	1969	1972	1974	1976	1978	1982
Adj. R^2	.24	.33	.30	.32	.25	.25
F-Value	440.4	159.6	262.6	158.3	278.8	330.3
Intercept	74.2	5.2	-3.7	-28.3	145.1	186.1
Total Expenditures	.008	.007	.008	.008	.008	.012
Age - 65-74	53.1	83.7	91.4	120.8	153.2	236.0
- 75+	52.3	63.0	88.2	116.3	156.3	189.0
Household Size	29.4	.46	.56	.86	.92	140.3
City - St. John's	68.4	158.2	208.8	319.3	241.3	332.1
- Halifax	-6.9	37.3	64.4	81.4	1.0	-44.5
- Montreal	-37.4	-1.7	20.7	35.1	-94.0	-81.7
- Ottawa	-73.9	-9.98	-7.1	18.6	-117.8	-157.6
- Winnipeg	-44.3	-17.7	-42.5	-.1	-113.0	-153.7
- Edmonton	-99.0	-69.1	-118.1	-94.0	-173.6	-179.0
- Vancouver	-6.7	-33.3	45.2	42.0	-86.0	-152.4

'minimum' intercept value with a $1 increase in total expenditures (all other independent variables held constant). An overview of the parameter estimates suggest a relative stability over time in the relationship between total expenditures and each category. In general, no major dramatic reshuffling of expenditures is occurring. There are some trends, however. Particularly declines can be noted in 1982 in food, shelter and clothing. Cumulatively, this suggests some recent general improvement in standard of living as less is allocated from increases in total money flows to these core necessity areas. These declines may indicate some improvement in discretionary budgets over time.

(iii) Marital status and household size have their largest dollar impacts on food, transportation and direct energy costs. The reason for the impact on food is obvious. Other research (Heslop, 1986) has noted that married couples are much more likely to spend money on transportation, increasing both that category and the transportation-related energy expenditures. Finally, energy costs may be augmented for couples which are more likely to own homes and more fully use them. Also, couple households on average are younger and, therefore, likely to be more active.

It is perhaps surprising that marital status does not have more of an effect on shelter costs. Looking at the three main shelter categories,however, there is a lack of stability over time in the relationship. For most years no significant relationship exists. So generally, single and two-person households vary little in housing expenditures.

(iv) Age has already been identified as of less importance than might be suggested from earlier works. If such a relationship did exist in the past, it is disappearing. Evidence of this decline in age differentiation can be seen in the decreasing significance of the age variables in the models. Significant age parameters are spotty and irregular.

It is more common to see significance associated with the oldest age group rather than the youngest or both. For most categories, any age shifts that occur are more likely after age 75 than before, supporting hypotheses concerning more major life shifts after this older age.

(v) City variables have been included to examine for any major geographic differences in the position of the elderly. In general, this variable set accounts for little improvement in the model's abilities to explain individual expenditure level variances. There is relatively little difference from city to city in the elderly's position. Most individual year models do show some cities which are significantly different from the omitted condition (Toronto). However, these relationships change from year to year. Not surprisingly, shelter categories are most affected by locale, but over time the cities have changed in importance. For example, those in Edmonton used to spend significantly less on rented living quarters, but by 1982 they spent more than those in Toronto. Also, not unexpectedly, energy expenditures have become significantly lower in the West.

CONCLUSIONS

Ideally, the definitive answer to the issue of age vs. income effects can only come through longitudinal studies on the same sample of households. The purest would actually require that controlled experiments be run manipulating or controlling on income and age. Of course, such experiments are unworkable, unacceptable and costly. However, evidence that has accumulated without these experiments is so substantial that the conclusions are unavoidable.

The fundamental importance of monetary resources (expenditures, income) in accounting for lifestyle patterns of the elderly has been supported consistently through the application of several analytical approaches. Age is much less of a constraint. Given the resources, the elderly would appear to seek to maintain pre-retirement lifestyles. Any declines in activities or disengagements are not significant until after 75 years of age.

Additionally, it should be recognized that there is very little difference in the requirements of one versus two-person senior households or of households in major cities across the country. Large disparities in pensions to households of different sizes may cause the single individual to have to make large adjustments in living standard. Variances in provisions for the elderly across the country do not seem justifiable.

Therefore, the results of this study suggest that much higher post-retirement income replacement ratios for Canadians are needed by the elderly to sustain desired living standards than are currently provided. Canada lags well behind most developed countries. Provisions to sustain money flows to the households of seniors can be arranged through public pensions or through private means or some combination of the two. However, the growing population of elderly seem anxious to maintain active, full lives and to consume the goods and services at levels commensurate with that lifestyle. Only their lowered income levels constrain them from attaining their ideals.

FOOTNOTES

1. For more detail on the techniques of sampling data collection, definitions and lists of expenditure categories, see Statistics Canada, Urban Family Expenditure or Family Expenditure in Canada documents for specific years.

2. Modifications of the series of six data sets were undertaken to ensure as far as possible the commonality of expenditure categories across the total set and to bring them, where possible, in line with 1982 procedures. For more detail on how this was done, contact the Social and Economic Studies Division of Statistics Canada.

3. For more detail on the Taylor linearization procedure, see Frankel (1971) and Holt (1977).

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APPENDIX
DETAILED REGRESSION RESULTS

* Significant at .05

-- Data not available in that year

DEP VARIABLE: FOOD

YEAR	1969			1972			1974		
	ADJ R-SQ 0.630 F VALUE 152.192			ADJ R-SQ 0.584 F VALUE 103.676			ADJ R-SQ 0.447 F VALUE 88.193		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	180.262	54.881	3.285*	213.808	71.3215	2.998*	446.718	168.2740	2.655*
TOTEX1	0.067	0.0079	8.465*	0.071	0.0074	9.627*	0.061	0.0077	7.922*
AGE 65-74	-64.428	26.5504	-2.427*	-111.232	29.4070	-3.783*	-154.504	44.0533	-3.507*
AGE 75 & UP	-122.761	34.8021	-3.527*	-42.120	37.7309	-1.287	-269.233	52.0295	-5.175*
FAMILY SIZE	388.847	33.8749	11.479*	4.178	0.4832	8.647*	5.143	0.6204	8.290*
ST-JOHNS	-10.087	58.2360	-0.173	86.497	73.5106	1.177	-40.842	81.8255	-0.499
HALIFAX	-116.977	62.6526	-1.867	-147.660	51.7347	-2.854*	-274.827	73.2404	-3.752*
MONTREAL	12.709	42.7920	0.297	23.912	54.1533	0.442	63.809	80.5135	0.793
OTTAWA	18.268	51.4111	0.355	-143.468	53.7207	-2.671*	-64.606	79.4914	-0.813
WINNIPEG	-48.517	37.1216	-1.307	-78.257	51.9046	-1.508*	-132.789	78.1214	-1.700
EDMONTON	-105.376	38.1488	-2.762*	-99.398	46.8406	-2.122	-103.020	81.9592	-1.257
VANCOUVER	-6.226	42.3394	-0.147	55.061	68.2693	0.807	52.523	84.0418	0.625

DEP VARIABLE: FOOD AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.370 F VALUE 52.991			ADJ R-SQ 0.438 F VALUE 58.033			ADJ R-SQ 0.444 F VALUE 87.149		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.238	0.025	9.488*	0.254	0.0182	13.943*	0.257	0.0156	16.544*
TOTEX1	-1.3X10-5	1.9X10-6	-6.776*	-1.5X10-5	1.2X10-6	-11.836*	-1.2X10-5	1.1X10-6	-11.582*
AGE 65-74	0.022	0.0076	2.926*	0.014	0.0058	2.373*	0.007	0.0063	1.101
AGE 75 & UP	0.042	0.0122	3.465*	0.052	0.0100	5.232*	0.019	0.0081	2.333*
FAMILY SIZE	0.019	0.0074	2.530*	2.4X10-4	6.9X10-5	3.401*	3.0X10-4	7.5X10-5	4.078*
ST-JOHNS	0.034	0.0147	2.297*	0.052	0.0338	1.533	-0.005	0.0146	-0.361
HALIFAX	- 0.031	0.0193	-1.579	-0.009	0.0133	-0.663	-0.027	0.0095	-2.786*
MONTREAL	0.015	0.0138	1.119	0.004	0.0113	0.332	0.033	0.0113	2.944*
OTTAWA	- 0.008	0.0198	-0.393	-0.019	0.0102	-1.853	-0.007	0.0190	-0.385
WINNIPEG	0.018	0.0182	1.005	3.8X10-4	0.0164	-0.023	-0.011	0.0105	-1.011
EDMONTON	- 0.003	0.0145	-0.193	-0.016	0.0129	-1.251	0.011	0.0142	0.754
VANCOUVER	0.008	0.0144	0.578	0.005	0.0139	-0.375	0.012	0.0105	1.159

DEP VARIABLE: FOOD

YEAR	1976			1978			1982		
	ADJ R-SQ 0.646 F VALUE 141.388			ADJ R-SQ 0.495 F VALUE 74.885			ADJ R-SQ 0.484 F VALUE 81.656		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	192.195	148.8840	1.291	552.169	141.3350	3.907*	656.434	174.2360	3.767*
TOTEX1	0.069	0.0104	6.669*	0.071	0.0102	6.899*	0.038	0.0049	7.740*
AGE 65-74	-109.227	93.9492	-1.163	-93.689	77.2053	-1.214	-214.958	114.6740	-1.875
AGE 75 & UP	-191.377	106.6930	-1.794	-238.060	79.8862	-2.980*	-363.208	121.8020	-2.982*
FAMILY SIZE	6.738	0.8897	7.573*	6.780	0.9769	6.940*	1319.640	99.4411	13.271*
ST-JOHNS	26.917	152.9050	0.176	-179.605	138.6110	-1.296	-175.589	238.4110	-0.736
HALIFAX	-141.370	124.9230	-1.132	-341.804	114.1400	-2.995*	-418.371	159.8850	-2.617*
MONTREAL	142.897	114.4120	1.249	111.660	118.0800	0.946	-286.633	130.3440	-2.199*
OTTAWA	-181.997	202.4130	-0.899	-238.063	193.8790	-1.228	-396.016	225.7180	-1.754
WINNIPEG	27.630	106.0770	0.260	-77.504	105.1500	-0.730	-259.534	130.8200	-1.984*
EDMONTON	-47.490	160.4610	-0.296	-298.032	122.0500	-2.442*	-109.183	224.7310	-0.486
VANCOUVER	43.478	102.6980	0.423	-156.954	125.0560	-1.255	-159.148	176.4150	-0.902

DEP VARIABLE: FOOD AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.328 F VALUE 38.481			ADJ R-SQ 0.391 F VALUE 49.365			ADJ R-SQ 0.251 F VALUE 29.881		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.200	0.0221	9.050*	0.214	0.0128	16.671*	0.223	0.0181	12.335*
TOTEX1	-4.2X10-6	1.6X10-6	-2.671*	5.9X10-6	6.5X10-7	-9.145*	2.4X10-6	6.8X10-7	-3.551*
AGE 65-74	0.039	0.0130	2.961*	0.021	0.0064	3.350*	0.019	0.0089	2.181*
AGE 75 & UP	0.058	0.0191	3.035*	0.045	0.0122	3.697*	0.034	0.0132	2.562*
FAMILY SIZE	1.0X10-4	1.2X10-4	0.084	2.5X10-4	6.8X10-5	3.716*	0.003	0.0106	0.245
ST-JOHNS	0.041	0.0257	1.600	0.036	0.0198	1.813	0.021	0.0243	0.866
HALIFAX	-0.007	0.0179	-0.385	0.007	0.0186	0.402	-0.005	0.0147	-0.319
MONTREAL	0.030	0.0143	2.122*	0.025	0.0093	2.638*	-0.001	0.0090	-0.062
OTTAWA	-0.012	0.0186	-0.651	-0.017	0.0124	-1.386	-0.031	0.0148	-2.074*
WINNIPEG	0.040	0.0195	2.053*	0.022	0.0116	1.927	0.005	0.0112	0.405
EDMONTON	0.033	0.03 1	1.101	-0.006	0.0088	-0.674	-0.013	0.0143	-0.926
VANCOUVER	0.006	0.0138	0.456	0.013	0.0133	0.948	0.006	0.0147	0.409

DEP VARIABLE: OWNED LIVING QUARTERS

YEAR	1969			1972			1974		
	ADJ R-SQ 0.185 F VALUE 313.632			ADJ R-SQ 0.208 F VALUE 85.844			ADJ R-SQ 0.194 F VALUE 145.034		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	-97.197	59.723	-1.627	-170.665	84.053	-2.0304*	-83.878	76.637	-1.0945
TOTEX1	0.056	0.010	5.7114*	0.053	0.011	5.0066*	0.040	0.005	7.6770*
AGE 65-74	73.628	36.336	2.0264*	217.027	52.098	4.1658*	35.324	52.541	0.6723
AGE 75 & UP	84.291	39.761	2.1199*	171.917	79.003	2.1761*	39.530	65.252	0.6058
FAMILY SIZE	54.939	6.950	7.9045*	1.284	0.176	7.2984*	1.935	0.164	11.7989*
ST-JOHNS	-153.652	41.424	-3.7093*	-189.653	55.864	-3.3949*	-23.934	72.996	-0.3279
HALIFAX	-32.298	38.273	-0.0916	-121.044	82.585	-1.4657	-234.317	60.806	-3.8536*
MONTREAL	-103.834	32.261	-3.2185*	-286.095	77.331	-3.6996*	-367.598	66.177	-5.5547*
OTTAWA	71.233	41.267	1.7262	-76.454	71.988	-1.0620	-28.202	122.239	-0.2307
WINNIPEG	41.045	15.129	2.7131*	-89.087	69.950	-1.2736	-69.256	74.366	-0.9313
EDMONTON	55.862	55.149	1.0129	-115.413	87.617	-1.3172	-121.190	89.252	-1.3578
VANCOUVER	21.566	21.679	0.9948	-6.406	72.246	-0.0887	98.166	94.111	1.0431

DEP VARIABLE: OWNED LIVING QUARTERS AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.035 F VALUE 50.621			ADJ R-SQ 0.083 F VALUE 30.461			ADJ R-SQ 0.077 F VALUE 50.996		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.047	0.003	17.348*	0.036	0.0065	5.472*	0.040	0.0037	10.756*
TOTEX1	-1.0X10-6	2.1X10-7	-4.849*	9.0X10-7	3.6X10-7	-2.515*	-8.5X10-7	1.6X10-7	-5.158*
AGE 65-74	0.018	0.003	5.708*	0.031	0.0057	5.393*	0.017	0.0049	3.552*
AGE 75 & UP	0.026	0.003	7.509*	0.030	0.0097	3.073*	0.016	0.0068	2.393*
FAMILY SIZE	0.006	3.9X10-4	15.641*	1.2X10-4	1.1X10-5	10.725*	1.2X10-4	9.4X10-6	13.263*
ST-JOHNS	-0.023	0.007	-3.450*	-0.016	0.0071	-2.261*	-0.003	0.0046	-0.689
HALIFAX	-0.007	0.006	-1.196	-0.013	0.0071	-1.895	-0.013	0.0047	-2.657
MONTREAL	-0.015	0.003	-4.945*	-0.026	0.0065	-4.001*	-0.027	0.0041	-6.667
OTTAWA	0.001	0.003	0.441	-0.005	0.0065	-0.800	-0.005	0.0075	-0.709
WINNIPEG	0.002	0.003	0.748	-0.007	0.0056	-1.197	-0.005	0.0048	-1.024
EDMONTON	0.006	0.004	1.758	-0.009	0.0069	-1.311	-0.008	0.0058	-1.374
VANCOUVER	0.003	0.003	0.925	-0.001	0.0064	-0.081	0.003	0.0072	0.040

DEP VARIABLE: OWNED LIVING QUARTERS

YEAR	1976			1978			1982		
	ADJ R-SQ 0.185 F VALUE 77.160			ADJ R-SQ 0.162 F VALUE 165.810			ADJ R-SQ 0.149 F VALUE 174.809		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	-4.724	109.699	-0.0431	39.231	75.571	0.5191	59.157	106.640	0.5547
TOTEX1	0.039	0.006	6.0947*	0.044	0.004	10.8569*	0.050	0.004	12.0639*
AGE 65-74	143.035	91.489	1.5634	-190.595	65.725	-2.8999*	-269.755	72.030	-3.7450*
AGE 75 & UP	-10.638	101.530	-0.1048	-129.916	65.607	-1.9802*	-292.845	89.941	-3.2560*
FAMILY SIZE	2.819	0.272	10.3645*	2.387	0.191	12.4753*	334.135	33.954	9.8379*
ST-JOHNS	-401.891	131.893	-3.0471*	-225.881	112.655	-2.0051*	-516.381	157.909	-3.2701*
HALIFAX	-481.194	124.137	-3.8763*	-52.206	89.645	-0.5824	-608.758	169.135	-3.5992*
MONTREAL	-592.969	88.544	-6.6969*	-404.580	82.418	-4.9089*	-433.710	112.787	-3.8454*
OTTAWA	-229.081	153.185	-1.4955	290.514	150.269	1.9333	60.552	198.477	0.3051
WINNIPEG	-266.021	122.826	-2.1658*	49.882	79.689	0.6260	-210.305	128.621	-1.6351
EDMONTON	-280.885	145.550	-1.9298	254.227	176.793	1.4380	123.052	204.526	0.6016
VANCOUVER	34.287	132.938	0.2579	378.823	119.476	3.1707*	437.368	151.759	2.8820*

DEP VARIABLE: OWNED LIVING QUARTERS AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.079 F VALUE 29.719			ADJ R-SQ 0.047 F VALUE 43.107			ADJ R-SQ 0.038 F VALUE 40.748		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.042	0.0055	7.651*	0.055	0.0033	16.643*	0.055	0.003	16.678*
TOTEX1	-6.7X10-7	1.4X10-7	-5.136*	-8.2X10-7	1.0X10-7	-7.959*	4.6X10-7	6.6X10-8	-7.053*
AGE 65-74	0.028	0.0063	4.381	0.008	0.0038	2.145*	0.007	0.0032	2.338*
AGE 75 & UP	0.023	0.0084	2.768*	0.021	0.0054	3.895*	0.011	0.0051	2.075*
FAMILY SIZE	1.4X10-4	1.0X10-5	13.474*	1.1X10-4	8.0X10-6	13.402*	0.011	0.0009	12.068*
ST-JOHNS	-0.017	0.0070	-2.505*	-0.013	0.0054	-2.498*	-0.018	0.0045	-4.090*
HALIFAX	-0.025	0.0058	-4.313*	-0.010	0.0053	-1.811	-0.024	0.0050	-4.768*
MONTREAL	-0.028	0.0046	-6.003*	-0.021	0.0034	-6.258*	-0.022	0.0039	-5.498*
OTTAWA	-0.011	0.0063	-1.739	0.004	0.0060	0.700	-0.006	0.0055	-1.181
WINNIPEG	-0.012	0.0064	-1.813	0.002	0.0054	0.443	-0.004	0.0058	-0.718
EDMONTON	-0.006	0.0077	-0.794	0.008	0.0079	1.004	-0.001	0.0045	-0.123
VANCOUVER	0.004	0.0062	0.639	0.013	0.0042	3.137*	0.010	0.0054	1.802

DEP VARIABLE: RENT FOR ALL

YEAR	1969			1972			1974		
	ADJ R-SQ 0.083 F VALUE 126.174			ADJ R-SQ 0.093 F VALUE 34.248			ADJ R-SQ 0.113 F VALUE 77.924		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	616.580	17.722	34.792*	1347.280	67.4927	19.962*	1380.630	41.9029	32.948*
TOTEX1	-0.001	0.0013	-1.135	-0.015	0.0040	-3.829*	-0.018	0.0028	-6.283*
AGE 65-74	-260.389	19.8132	-13.142*	-452.761	48.8478	-9.269*	-472.887	32.3120	-14.635*
AGE 75 & UP	-233.449	23.1484	-10.085*	-432.188	44.9586	-9.613*	-496.849	55.9101	-8.887*
FAMILY SIZE	-62.088	2.8402	-21.860*	-1.037	0.1583	-6.549*	-1.211	0.1242	-9.751*
ST-JOHNS	4.622	20.5006	0.225	-365.415	96.9501	-3.769*	-165.554	46.3368	-3.573*
HALIFAX	222.563	44.9483	4.952*	24.499	74.7554	0.328	142.253	83.1648	1.711
MONTREAL	295.927	15.3306	19.303*	-50.883	69.4785	-0.732	91.247	47.3626	1.927
OTTAWA	301.807	31.1607	9.686*	19.905	56.5660	0.352	249.335	153.0100	1.630
WINNIPEG	29.985	22.8563	1.312	-338.267	63.5424	-5.323*	-141.702	54.2899	-2.610*
EDMONTON	144.275	22.0962	6.529*	-117.236	61.1715	-1.917	17.956	64.7201	0.277
VANCOUVER	111.735	27.9575	3.997*	-140.916	66.7682	-2.111*	28.241	64.8374	0.436

DEP VARIABLE: RENT AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.188 F VALUE 319.919			ADJ R-SQ 0.287 F VALUE 131.293			ADJ R-SQ 0.291 F VALUE 248.004		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.131	0.004	30.507*	0.215	0.0058	37.175*	0.181	0.0062	29.133*
TOTEX1	5.1X10-6	6.1X10-7	-8.416*	-6.8X10-6	5.8X10-7	-11.777*	-4.8X10-6	5.4X10-7	-8.873*
AGE 65-74	0.013	0.0049	-2.696*	-0.018	0.0090	-2.013*	-0.011	0.0068	-1.612
AGE 75 & UP	0.010	0.0069	1.412	0.015	0.0148	0.997	0.026	0.0133	1.959
FAMILY SIZE	-0.010	0.0007	-15.156*	-1.5X10-4	1.4X10-5	-10.703*	-1.4X10-4	1.1X10-5	-12.552*
ST-JOHNS	0.005	0.0043	1.133	-0.044	0.0173	-2.561*	-0.018	0.0045	-4.087*
HALIFAX	0.036	0.0084	4.304*	0.006	0.0054	1.036	0.013	0.0063	1.997*
MONTREAL	0.056	0.0033	16.856*	0.003	0.0048	0.592	0.018	0.0046	3.862*
OTTAWA	0.053	0.0065	7.839*	0.011	0.0037	2.968	0.019	0.0117	1.642
WINNIPEG	0.023	0.0064	3.570*	-0.029	0.0043	-6.645*	-0.010	0.0098	-0.984
EDMONTON	0.022	0.0045	4.982*	-0.008	0.0041	-1.905	0.004	0.0076	0.542
VANCOUVER	0.026	0.0056	4.624*	-0.010	0.0069	-1.481	0.009	0.0091	1.031

DEP VARIABLE: RENT FOR ALL

YEAR	1976			1978			1982		
	ADJ R-SQ 0.122 F VALUE 43.051			ADJ R-SQ 0.117 F VALUE 114.054			ADJ R-SQ 0.106 F VALUE 118.897		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	1951.910	70.9788	27.500*	1624.710	50.0278	32.476*	2323.470	62.4281	37.218*
TOTEX1	-0.016	0.0042	-3.751*	-0.015	0.0020	-7.722*	-0.018	0.0015	-11.533*
AGE 65-74	-595.693	73.7779	-8.074*	-625.850	47.0907	-13.290*	-892.275	65.5626	-13.610*
AGE 75 & UP	-593.815	100.1340	-5.930*	-723.470	62.7538	-11.529*	-824.874	83.5368	-9.874*
FAMILY SIZE	-1.837	0.2073	-8.863*	-1.751	0.1188	-14.733*	-230.917	18.7980	-12.274*
ST-JOHNS	-456.671	83.5967	-5.463*	-175.686	70.5580	-2.490*	-64.358	104.5090	-0.616
HALIFAX	29.561	90.2542	0.328	428.893	59.5744	7.199*	759.020	204.1110	3.719*
MONTREAL	-96.204	57.7092	-1.667	385.515	50.3366	7.659*	473.938	81.2719	5.832*
OTTAWA	240.904	130.9380	1.840	479.610	96.7752	4.956*	721.795	137.6660	5.243*
WINNIPEG	-345.398	87.8433	-3.932*	35.608	79.8880	0.446	329.546	136.4310	2.415*
EDMONTON	-47.531	93.4701	-0.509	475.905	107.3970	4.431*	982.437	161.1920	6.095*
VANCOUVER	-79.017	90.1139	-0.877	333.720	76.3869	4.369*	895.946	114.7410	7.808*

DEP VARIABLE: RENT AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.298 F VALUE 143.297			ADJ R-SQ 0.229 F VALUE 254.501			ADJ R-SQ 0.150 F VALUE 332.233		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.210	0.0082	25.737*	0.158	0.0053	30.042*	0.170	0.0042	40.615*
TOTEX1	-4.2X10-6	4.2X10-7	-9.833*	-3.1X10-6	2.6X10-7	-11.801*	-2.4X10-6	1.5X10-7	-15.715*
AGE 65-74	-0.018	0.0087	-2.035*	-0.039	0.0053	-7.363*	-0.031	0.0055	-5.704*
AGE 75 & UP	0.025	0.0158	1.562	-0.016	0.0090	-1.782	-0.003	0.0082	-0.405
FAMILY SIZE	-1.6X10-4	1.6X10-5	-9.862*	1.4X10-4	9.6X10-6	-14.621*	-0.016	0.0010	-16.169*
ST-JOHNS	-0.044	0.0083	-5.335*	-0.007	0.0041	-1.731	0.004	0.0056	0.655
HALIFAX	-0.004	0.0076	-0.516	0.040	0.0074	5.423*	0.041	0.0079	5.181*
MONTREAL	-0.007	0.0055	-1.236	0.027	0.0033	8.220*	0.041	0.0051	8.092*
OTTAWA	0.004	0.0084	0.481	0.029	0.0071	4.140*	0.036	0.0055	6.532*
WINNIPEG	-0.027	0.0081	-3.331*	0.019	0.0081	2.341*	0.025	0.0077	3.218*
EDMONTON	-0.015	0.0090	-1.615	0.033	0.0069	4.847*	0.042	0.0054	7.730*
VANCOUVER	-0.009	0.0074	-1.273	0.031	0.0051	6.039*	0.040	0.0072	5.595*

DEP VARIABLE: SHELTER

YEAR	1969			1972			1974		
	ADJ R-SQ 0.361 F VALUE 777.808			ADJ R-SQ 0.344 F VALUE 170.974			ADJ R-SQ 0.282 F VALUE 237.158		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	469.307	75.238	6.238*	1072.250	70.5361	15.202*	1128.450	71.8672	15.702*
TOTEX1	0.108	0.0151	7.144*	0.085	0.0086	9.906*	0.069	0.0063	10.967*
AGE 65-74	-32.144	38.4476	-0.836	-55.328	64.7936	-0.854	-203.634	58.6123	-3.474*
AGE 75 & UP	29.657	61.6778	0.481	-55.534	71.5385	-0.776	-187.838	72.5187	-2.590*
FAMILY SIZE	-0.002	10.6517	-1.6X10-4	0.026	0.0133	1.966	0.813	0.1479	5.495*
ST-JOHNS	-61.910	38.1160	-1.624	-344.803	66.6238	-5.175*	20.110	86.1322	0.233
HALIFAX	179.354	43.0589	4.165*	-26.784	99.2918	-0.270	-11.420	87.1113	-0.131
MONTREAL	187.409	33.5653	5.583*	-270.613	54.8752	-4.931*	-161.149	69.2114	-2.328*
OTTAWA	238.553	41.8377	5.702*	-65.705	67.4138	-0.975	192.584	66.0743	2.915*
WINNIPEG	6.130	21.3266	0.287	-437.663	72.5102	-6.036*	-254.592	74.9322	-3.398*
EDMONTON	81.483	44.3613	1.837	-286.198	63.6776	-4.494*	-213.323	44.8375	-4.758*
VANCOUVER	95.533	27.2877	3.501*	-104.286	57.6068	-1.810	150.530	78.3234	1.922

DEP VARIABLE: SHELTER AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.254 F VALUE 470.296			ADJ R-SQ 0.346 F VALUE 172.586			ADJ R-SQ 0.297 F VALUE 256.131		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.217	0.004	51.785*	0.264	0.0070	37.618*	0.236	0.0060	39.574*
TOTEX1	-6.8X10-6	7.2X10-7	-9.381*	7.1X10-6	6.2X10-7	-11.360*	-5.2X10-6	5.5X10-7	-9.599*
AGE 65-74	0.033	0.0040	8.454*	0.041	0.0084	4.967*	0.036	0.0076	4.696*
AGE 75 & UP	0.081	0.0057	14.096*	0.080	0.0100	7.998*	0.076	0.0086	8.891*
FAMILY SIZE	-0.003	0.0006	-5.514*	-2.9X10-5	1.1X10-5	-2.688*	-1.3X10-5	8.7X10-6	-1.460
ST-JOHNS	-0.007	0.0073	-0.999	-0.029	0.0061	-4.746*	-0.002	0.0040	-0.496
HALIFAX	0.020	0.0046	4.470*	0.001	0.0079	0.176	0.007	0.0062	1.175
MONTREAL	0.032	0.0040	8.032*	-0.012	0.0055	-2.193*	.000	0.0039	0.038
OTTAWA	0.032	0.0043	7.360*	0.005	0.0094	0.518	0.010	0.0057	1.752
WINNIPEG	0.010	0.0030	3.267*	-0.033	0.0045	-7.407*	-0.016	0.0055	-2.882*
EDMONTON	0.011	0.0049	2.199*	-0.019	0.0052	-3.695*	-0.011	0.0036	-3.043*
VANCOUVER	0.019	0.0036	5.211*	-0.005	0.0075	-0.695	0.013	0.0049	2.623*

DEP VARIABLE: SHELTER

YEAR	1976			1978			1982		
	ADJ R-SQ 0.289 F VALUE 137.154			ADJ R-SQ 0.238 F VALUE 267.597			ADJ R-SQ 0.254 F VALUE 339.299		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	1720.720	88.9296	19.349*	1664.050	84.2729	19.746*	2380.500	109.2810	21.783*
TOTEX1	0.073	0.0052	14.003*	0.073	0.0067	10.952*	0.084	0.0052	16.213*
AGE 65-74	-107.152	88.2213	-1.215	-470.707	65.9023	-7.141*	-667.525	90.5067	-7.375*
AGE 75 & UP	-207.378	90.4905	-2.292*	-511.827	86.8988	-5.890*	-612.310	122.4860	-4.999*
FAMILY SIZE	1.045	0.2312	4.520*	0.814	0.2130	3.822*	147.467	31.6261	4.663*
ST-JOHNS	-546.306	120.2460	-4.543*	-192.249	78.0402	-2.463*	-411.704	142.2320	-2.895*
HALIFAX	-359.558	118.3170	-3.039*	429.601	83.9499	5.117*	51.514	172.3690	0.299
MONTREAL	-556.083	77.5886	-7.167*	-19.437	72.8321	-0.267	35.335	100.0320	0.353
OTTAWA	63.577	117.6930	0.540	647.543	102.1130	6.341*	642.672	166.3630	3.863*
WINNIPEG	-573.652	107.5990	-5.331*	9.002	64.1938	0.140	-13.116	153.2090	-0.086
EDMONTON	-382.562	125.4030	-3.051*	470.201	115.2060	4.081*	877.890	199.5210	4.400*
VANCOUVER	-64.227	104.5470	-0.614	596.247	134.9970	4.417*	1062.370	126.3620	8.407*

DEP VARIABLE: SHELTER AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.333 F VALUE 167.623			ADJ R-SQ 0.286 F VALUE 341.882			ADJ R-SQ 0.274 F VALUE 376.972		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.266	0.0067	39.509*	0.254	0.0047	53.545*	0.257	0.0042	63.665*
TOTEX1	-4.5X10-6	4.3X10-7	-10.324*	-4.1X10-6	3.6X10-7	-11.454*	-3.0X10-6	1.8X10-7	-16.328*
AGE 65-74	0.041	0.0072	5.726*	0.009	0.0048	1.838	0.016	0.0044	3.648*
AGE 75 & UP	0.089	0.0114	7.809*	0.063	0.0072	8.656*	0.056	0.0069	8.147*
FAMILY SIZE	-2.8X10-5	1.4X10-5	-2.025*	-3.8X10-5	1.0X10-5	-3.694*	-0.004	0.0010	-4.072*
ST-JOHNS	-0.029	0.0064	-4.531*	-0.009	0.0059	-1.497	-0.005	0.0053	-0.928
HALIFAX	-0.020	0.0055	-3.664*	0.025	0.0027	9.105*	0.010	0.0051	2.061*
MONTREAL	-0.020	0.0048	-4.220*	0.003	0.0044	0.704	0.016	0.0040	4.021*
OTTAWA	-0.004	0.0060	-0.667	0.018	0.0045	3.908*	0.015	0.0046	3.293*
WINNIPEG	-0.032	0.0061	-5.229*	0.007	0.0039	2.117*	0.012	0.0062	1.948
EDMONTON	-0.021	0.0070	-2.933*	0.023	0.0053	4.371*	0.025	0.0045	5.594*
VANCOUVER	-0.003	0.0058	-0.601	0.028	0.0044	6.384*	0.032	0.0049	6.483*

DEP VARIABLE: CLOTHING

YEAR	1969			1972			1974		
	ADJ R-SQ 0.517 F VALUE 1475.424			ADJ R-SQ 0.498 F VALUE 322.599			ADJ R-SQ 0.434 F VALUE 462.074		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	-79.851	22.477	-3.553*	-38.912	53.232	-0.7310	13.659	46.804	0.2918
TOTEX1	0.081	0.005	16.1607*	0.064	0.006	11.0677*	0.057	0.005	12.0710*
AGE 65-74	-56.050	13.600	-4.1214*	-71.523	30.109	-2.3755*	-98.117	30.162	-3.2530*
AGE 75 & UP	-69.105	16.660	-4.1480*	-115.747	30.422	-3.8048*	-172.056	36.745	-4.6824*
FAMILY SIZE	61.151	5.316	11.5027*	0.884	0.084	10.4618*	1.024	0.096	10.6885*
ST-JOHNS	54.491	25.593	2.1292*	20.693	25.645	0.8069	-68.612	43.174	-1.5892
HALIFAX	4.402	28.311	0.1555	-57.822	22.132	-2.6125*	5.507	34.004	0.1620
MONTREAL	14.295	18.057	0.7916	29.783	43.420	0.0686	110.028	35.674	3.0843*
OTTAWA	-7.737	39.321	-0.1968	-30.941	21.001	-1.4733	109.598	41.975	2.6111*
WINNIPEG	12.529	19.917	0.6291	2.037	22.415	0.0909	4.042	31.539	0.1281
EDMONTON	19.065	31.185	0.6114	27.457	18.936	1.4499	44.656	47.730	0.9356
VANCOUVER	-56.937	27.830	-2.0459*	-89.909	25.350	-3.5467*	-154.069	28.703	-5.3678*

DEP VARIABLE: CLOTHING AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.096 F VALUE 147.156			ADJ R-SQ 0.077 F VALUE 27.895			ADJ R-SQ 0.063 F VALUE 41.431		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.075	.002	37.822*	0.064	0.0021	30.089*	0.068	0.0016	43.648*
TOTEX1	-1.0X10-6	1.4X10-7	-7.0197*	-5.1X10-7	1.7X10-7	-3.028*	-6.6X10-7	8.3X10-8	-7.876*
AGE 65-74	-0.015	0.002	-8.5350*	-0.008	0.0034	-2.382*	-0.008	0.0023	-3.543*
AGE 75 & UP	-0.026	0.002	-11.9003*	-0.020	0.0029	-6.635*	-0.018	0.0023	-7.724*
FAMILY SIZE	0.006	3.7X10-4	16.4583*	5.5X10-5	4.8X10-6	11.371*	5.0X10-5	3.4X10-6	14.930*
ST-JOHNS	0.015	0.007	1.9778*	0.010	0.0044	2.230*	-0.002	0.0032	-0.562
HALIFAX	0.008	0.003	0.2871	-0.004	0.0016	-2.401*	-0.001	0.0018	-0.741
MONTREAL	0.001	0.002	0.2640	0.006	0.0025	2.309*	0.007	0.0014	4.512*
OTTAWA	-0.002	0.003	-0.5606	0.002	0.0024	0.724	0.005	0.0021	2.135*
WINNIPEG	0.001	0.002	0.4938	0.005	0.0018	2.588*	0.003	0.0023	1.253
EDMONTON	0.005	0.004	1.1341	0.006	0.0015	3.788*	0.003	0.0022	1.231
VANCOUVER	-0.005	0.003	-1.8409	-0.005	0.0023	-2.095*	-0.009	0.0019	-4.475*

DEP VARIABLE: CLOTHING

YEAR	1976			1978			1982		
	ADJ R-SQ 0.473 F VALUE 300.988			ADJ R-SQ 0.434 F VALUE 654.328			ADJ R-SQ 0.413 F VALUE 700.762		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	-144.217	61.300	-2.3526*	-164.418	64.818	-2.5366*	-113.994	61.521	-1.852
TOTEX1	0.071	0.005	14.1047*	0.063	0.005	12.4841*	0.049	0.003	14.8795*
AGE 65-74	-92.482	42.676	-2.1671*	-49.287	42.918	-1.1484	-179.090	40.816	-4.3877*
AGE 75 & UP	-145.856	68.806	-2.1198*	-73.839	54.015	-1.3670	-173.195	53.077	-3.2631*
FAMILY SIZE	1.148	0.017	6.8095*	1.430	0.138	10.3664*	197.046	15.417	12.7809*
ST-JOHNS	-123.576	58.033	-2.1294*	-74.253	48.501	-1.5310	108.456	78.737	1.3775
HALIFAX	-54.871	55.695	-0.9852	-29.455	44.328	-0.6645	24.642	87.914	0.0280
MONTREAL	82.809	45.831	1.8068	141.841	44.248	3.2056*	188.160	46.850	4.0162*
OTTAWA	-109.001	67.116	-1.6241	17.742	45.314	0.3915	47.441	103.524	0.4583
WINNIPEG	-32.486	50.499	-0.6433	-36.440	53.907	-0.6760	41.254	47.623	0.8663
EDMONTON	23.474	68.831	0.3410	33.661	90.030	0.3739	141.548	81.483	1.7372
VANCOUVER	-212.165	50.847	-4.1726*	-171.156	34.803	-4.9179*	-63.668	45.816	-1.3897

DEP VARIABLE: CLOTHING AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.054 F VALUE 19.961			ADJ R-SQ 0.050 F VALUE 46.159			ADJ R-SQ 0.053 F VALUE 56.682		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.067	0.004	18.5290*	0.060	0.0017	34.818*	0.053	0.001	44.457*
TOTEX1	-3.97X10	-1.0X10-7	-3.9424*	-2.95X10	-5.2X10-8	-5.731*	-2.5X10-7	2.8X10-8	-8.793*
AGE 65-74	-0.009	0.003	-3.0794*	-0.003	0.0021	-1.641	-0.006	0.0015	-3.936*
AGE 75 & UP	-0.021	0.003	-6.6033*	-0.012	0.0027	-4.331*	-0.010	0.0023	-4.494*
FAMILY SIZE	5.2X10-5	5.8X10-6	8.8563*	5.3X10-5	3.9X10-6	13.764*	0.005	0.0003	16.954*
ST-JOHNS	-0.006	0.004	-1.9771*	-0.002	0.0038	-0.449	3.6X10-4	0.0022	0.164
HALIFAX	-0.004	0.003	-1.3145	-0.002	0.0024	-1.001	-0.002	0.0023	-0.947
MONTREAL	0.003	0.002	1.0508	0.006	0.0019	3.149*	0.005	0.0015	3.338*
OTTAWA	-0.004	0.003	-1.5539	0.001	0.0017	0.832	-0.002	0.0026	-0.576
WINNIPEG	-0.001	0.003	-0.5233	-0.006	0.0023	-2.448*	5.7X10-5	0.0018	0.032
EDMONTON	0.003	0.004	0.9251	-0.005	0.0025	-0.202	0.002	0.0021	0.976
VANCOUVER	-0.009	0.002	-3.6102*	-0.008	0.0013	-6.126*	-0.004	0.0012	-3.518*

DEP VARIABLE: TRANSPORTATION

YEAR	1969			1972			1974		
	ADJ R-SQ 0.166 F VALUE 274.827			ADJ R-SQ 0.190 F VALUE 76.766			ADJ R-SQ 0.153 F VALUE 109.665		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	442.096	54.117	8.169*	415.118	145.814	2.8469*	471.418	90.303	5.2204*
TOTEX1	0.089	0.010	9.1840*	0.086	0.017	4.9789*	0.074	0.007	10.6400*
AGE 65-74	-258.800	41.333	-6.2613*	-379.751	50.094	-7.5808*	-324.957	75.873	-4.2891*
AGE 75 & UP	-497.017	38.251	-12.9935*	-488.895	85.019	-5.7504*	-607.873	74.940	-8.1114*
FAMILY SIZE	1.218	9.686	0.1258	0.377	0.241	1.5650	0.765	0.260	2.9458*
ST-JOHNS	-192.056	35.003	-5.4868*	60.777	142.829	0.4255	407.443	92.401	4.4095*
HALIFAX	6.775	52.378	0.1293	28.371	86.336	0.2945	140.703	146.837	0.9582
MONTREAL	-103.362	36.869	-2.8035*	-256.887	100.833	-2.5477*	-29.380	104.917	-0.2800
OTTAWA	85.606	75.845	-1.1287	-80.261	112.534	-0.7132	-144.427	121.066	-1.1930
WINNIPEG	-33.449	54.405	-0.6148	-124.650	84.300	-1.4786	-48.338	73.708	-0.6558
EDMONTON	164.253	44.019	3.7314*	59.047	117.190	0.5026	228.862	134.517	1.7014
VANCOUVER	47.067	45.552	1.0333	32.566	82.160	0.9644	133.765	95.524	1.4003

DEP VARIABLE: TRANSPORTATION AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.037 F VALUE 54.514			ADJ R-SQ 0.046 F VALUE 16.418			ADJ R-SQ 0.021 F VALUE 13.653		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.128	0.004	33.907*	0.107	0.0072	14.933*	0.106	0.0036	29.243*
TOTEX1	-4.3X10-7	2.1X10-7	-2.0133*	1.1X10-7	3.7X10-7	0.293	-4.4X10-7	1.5X10-7	-2.919*
AGE 65-74	-0.035	0.005	-7.4914*	-0.035	0.0052	-6.622*	-0.021	0.0048	-4.484*
AGE 75 & UP	-0.073	0.004	-19.3559*	-0.062	0.0064	-9.581*	-0.054	0.0056	-9.768*
FAMILY SIZE	-0.001	0.001	-2.0778*	1.7X10-6	1.3X10-5	0.125	2.0X10-5	1.1X10-5	1.788
ST-JOHNS	-0.025	0.004	-6.0949*	0.011	0.0085	1.304	0.020	0.0058	3.486*
HALIFAX	-0.003	0.006	-0.5488	0.010	0.0058	1.738	0.007	0.0060	1.164
MONTREAL	-0.018	0.003	-6.3841*	-0.017	0.0062	-2.706*	-0.006	0.0057	-1.009
OTTAWA	-0.017	0.008	-2.1755*	-0.005	0.0077	-0.614	-0.012	0.0056	-2.089*
WINNIPEG	-0.005	0.003	-1.6257	-0.005	0.0064	-0.747	-3.3X10-4	0.0036	-0.093
EDMONTON	0.003	0.005	0.5433	0.010	0.0090	1.100	0.012	0.0064	0.909
VANCOUVER	0.001	0.005	0.1365	0.010	0.0067	1.456	0.005	0.0054	0.862

DEP VARIABLE: TRANSPORTATION

YEAR	1976			1978			1982		
	ADJ R-SQ 0.189 F VALUE 78.707			ADJ R-SQ 0.154 F VALUE 156.339			ADJ R-SQ 0.166 F VALUE 198.791		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	379.821	131.300	2.8928*	660.856	119.826	5.5151*	645.662	118.233	7.9983*
TOTEX1	0.086	0.008	10.6744*	0.086	0.010	8.6815*	0.077	0.006	13.9474*
AGE 65-74	-236.009	118.866	-1.9855*	-73.146	115.155	-0.6352	-353.805	121.277	-2.9173*
AGE 75 & UP	-555.570	145.583	-3.8162*	-759.983	110.465	-6.8799*	-1006.31	106.547	-9.4447*
FAMILY SIZE	1.062	0.336	3.1570*	1.585	0.299	5.3016*	214.783	39.429	5.4473*
ST-JOHNS	111.062	138.481	0.8020	-279.504	146.177	-1.9121	173.359	215.695	0.8037
HALIFAX	315.412	167.968	1.8778	-72.886	198.060	-0.3680	396.677	187.174	2.1193*
MONTREAL	-2.096	99.255	-0.0211	-373.581	104.663	-3.5694*	-107.049	127.213	-0.8415
OTTAWA	161.150	156.759	1.0280	-294.684	175.727	-1.6769	-391.423	185.183	-2.1137*
WINNIPEG	45.219	115.597	0.3912	-325.538	148.116	-2.1979*	44.061	188.525	0.2337
EDMONTON	417.259	175.184	2.3818*	99.205	163.947	0.6051	167.503	237.203	0.7062
VANCOUVER	115.067	109.109	1.0546	-174.298	100.309	-1.7376	74.931	182.869	0.4098

DEP VARIABLE: TRANSPORTATION AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.017 F VALUE 6.736			ADJ R-SQ 0.026 F VALUE 23.541			ADJ R-SQ 0.021 F VALUE 21.789		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.101	0.005	18.8058*	0.118	0.0035	33.636*	0.120	0.004	33.792*
TOTEX1	-2.1X10-7	1.4X10-7	-1.4424*	-6.6X10-7	1.3X10-7	-5.290*	-5.9X10-7	7.4X10-8	-7.914*
AGE 65-74	-0.017	0.006	-2.6274*	0.007	0.0057	1.204	-0.004	0.0051	-0.737
AGE 75 & UP	-0.043	0.008	-5.5365*	-0.047	0.0057	-8.271*	-0.043	0.0055	-7.830*
FAMILY SIZE	2.7X10-5	1.2X10-5	2.2530*	5.4X10-5	7.6X10-6	6.760*	0.004	0.0008	5.678*
ST-JOHNS	0.008	0.006	1.2686	-0.014	0.0071	-1.908	0.001	0.0065	0.080
HALIFAX	0.019	0.008	2.2890*	-0.014	0.0090	-1.530	-0.002	0.0055	-0.382
MONTREAL	-0.002	0.005	-0.4042	-0.022	0.0033	-6.527*	-0.013	0.0041	-3.208*
OTTAWA	0.002	0.006	0.3619	-0.013	0.0066	-1.929	-0.015	0.0047	-3.282*
WINNIPEG	0.005	0.006	0.8784	-0.021	0.0054	-3.889*	-0.007	0.0052	-1.341
EDMONTON	0.017	0.007	2.4762*	-0.001	0.0050	-0.160	-0.007	0.0068	-1.084
VANCOUVER	0.006	0.005	1.3521	-0.008	0.0038	-1.991*	4.8X10-5	0.0035	0.014

DEP VARIABLE: DIRECT ENERGY

YEAR	1969			1972			1974		
	ADJ R-SQ 0.242 F VALUE 440.375			ADJ R-SQ 0.329 F VALUE 159.558			ADJ R-SQ 0.303 F VALUE 262.560		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	74.211	10.796	6.874*	5.206	9.013	0.578	-3.726	9.637	-0.3867
TOTEX1	0.008	0.002	4.960*	0.007	0.001	8.131*	0.008	0.001	9.1269*
AGE 65-74	53.115	8.236	6.449*	83.676	8.705	9.612*	91.351	8.969	10.1848*
AGE 75 & UP	52.325	7.268	7.199*	63.039	14.749	4.274*	88.155	14.017	6.2893*
FAMILY SIZE	29.369	1.352	21.722*	0.457	0.026	17.302*	0.563	0.031	18.2428*
ST-JOHNS	68.356	10.233	6.680*	158.183	12.270	12.892*	208.830	32.902	6.3470*
HALIFAX	-6.906	5.761	-1.199	37.283	11.707	3.185*	64.421	20.642	3.1693*
MONTREAL	-37.417	4.846	-7.721*	-1.702	10.828	-0.157	20.736	9.847	2.1058*
OTTAWA	-73.865	8.923	-8.278*	-9.980	11.217	-0.890	-7.084	25.632	-0.2764
WINNIPEG	-44.274	6.144	-7.206*	-17.690	8.407	-2.104*	-42.548	13.777	-3.0882*
EDMONTON	-98.984	4.419	-22.399*	-69.054	7.982	-8.651*	-118.141	7.826	-15.0951*
VANCOUVER	-6.747	6.070	-1.112	33.287	12.500	2.663*	45.226	17.430	2.5948*

DEP VARIABLE: DIRECT ENERGY AS PERCENT OF TOTAL EXPENDITURES

YEAR	1969			1972			1974		
	ADJ R-SQ 0.225 F VALUE 400.645			ADJ R-SQ 0.193 F VALUE 78.581			ADJ R-SQ 0.170 F VALUE 124.354		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.044	0.002	19.906*	0.020	0.002	10.147*	0.020	0.0012	16.056*
TOTEX1	-2.2x10-6	2.6x10-7	-8.444*	1.0x10-6	1.1x10-7	-8.834*	-7.5x10-7	6.7x10-8	-11.234*
AGE 65-74	0.020	0.002	10.239*	0.020	0.002	9.116*	0.018	0.0024	14.531*
AGE 75 & UP	0.034	0.003	10.514*	0.023	0.004	5.865*	0.022	0.0032	6.888*
FAMILY SIZE	0.003	2.6x10-4	10.435*	3.8x10-5	2.9x10-6	13.237*	3.5x10-5	2.1x10-6	17.719*
ST-JOHNS	0.011	0.006	1.793	0.027	0.008	3.265*	0.020	0.0036	5.618*
HALIFAX	-0.006	0.001	-4.105*	0.006	0.002	3.551	0.007	0.0018	3.914*
MONTREAL	-0.009	0.001	-9.579*	0.002	0.002	1.172	0.003	0.0006	4.438*
OTTAWA	-0.014	0.001	-11.656*	-0.001	0.002	-0.556	-0.001	0.0020	-0.581
WINNIPEG	-0.012	0.002	-7.068*	-0.002	0.002	-1.095	-0.003	0.0017	-1.622
EDMONTON	-0.016	-0.001	-16.868*	-0.006	0.001	-4.973*	-0.009	0.0009	-10.007*
VANCOUVER	-0.007	0.002	-3.987*	0.004	0.002	1.730	0.004	0.0020	1.931

DEP VARIABLE: DIRECT ENERGY

YEAR	1976			1978			1982		
	ADJ R-SQ 0.320 F VALUE 158.340			ADJ R-SQ 0.246 F VALUE 278.834			ADJ R-SQ 0.249 F VALUE 330.256		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	-28.334	18.540	-1.5283	145.064	17.069	8.499*	186.133	23.424	7.946*
TOTEX1	0.008	0.001	6.6802*	0.008	0.001	9.749*	0.012	0.001	17.693*
AGE 65-74	120.774	20.288	5.9529*	153.230	15.103	10.146*	236.035	23.619	9.994*
AGE 75 & UP	116.273	25.085	4.6351*	156.281	21.594	7.237*	189.010	29.825	6.337*
FAMILY SIZE	0.858	0.046	18.5064*	0.923	0.041	22.664*	140.275	6.191	22.658*
ST-JOHNS	319.327	26.829	11.9024*	241.298	26.797	9.005*	332.071	39.256	8.459*
HALIFAX	81.446	20.049	1.0623	1.001	26.573	0.038	-44.516	57.499	-0.774
MONTREAL	35.080	14.334	2.4474*	-94.015	15.394	-6.107*	-81.727	31.147	-2.624*
OTTAWA	18.602	25.489	0.7298	-117.788	13.765	-8.557*	-157.551	40.283	-3.911*
WINNIPEG	-0.084	17.298	-0.0049	-113.012	21.458	-5.267*	-153.710	25.496	-6.029*
EDMONTON	-94.004	16.837	-5.5833*	-173.609	13.051	-13.303*	-179.032	27.915	-6.413*
VANCOUVER	41.953	16.445	2.5511*	-86.023	24.659	-3.489*	-152.428	25.677	-5.936*

DEP VARIABLE: DIRECT ENERGY AS PERCENT OF TOTAL EXPENDITURES

YEAR	1976			1978			1982		
	ADJ R-SQ 0.184 F VALUE 76.543			ADJ R-SQ 0.252 F VALUE 287.807			ADJ R-SQ 0.196 F VALUE 244.002		
	PARAMETER ESTIMATE	STANDARD ERROR	PROB. T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T	PARAMETER ESTIMATE	STANDARD ERROR	PROB T
VARIABLE(INDEP)									
INTERCEPT	0.019	0.002	9.6010*	0.047	0.0021	21.856*	0.046	0.002	25.572*
TOTEX1	6.3x10-07	7.3X10-8	-8.7559*	-1.1X10-6	9.9x10-8	-11.464*	-7.2X10-7	5.1X10-8	-14.091*
AGE 65-74	0.020	0.003	7.4381*	0.026	0.0020	12.531*	0.027	0.0022	12.312*
AGE 75 & UP	0.028	0.004	6.7793*	0.044	0.0041	10.634*	0.034	0.0034	10.040*
FAMILY SIZE	4.2X10-5	3.0X10-6	13.7092*	0.004	3.4X10-6	10.571*	0.004	0.0003	12.588*
ST-JOHNS	0.031	0.003	9.3353*	0.013	0.0032	4.184*	0.014	0.0027	5.044*
HALIFAX	0.006	0.002	2.8598*	-0.005	0.0027	-1.890	-0.004	0.0031	-1.205
MONTREAL	0.005	0.002	3.1462*	-0.009	0.0014	-6.432*	-0.007	0.0016	-4.217*
OTTAWA	0.001	0.002	0.5018	-0.012	0.0013	-9.544*	-0.011	0.0024	-4.559*
WINNIPEG	0.002	0.002	1.2814	-0.013	0.0025	-5.296*	-0.009	0.0022	-4.145*
EDMONTON	-0.005	0.002	-2.3995*	0.012	0.0015	-8.071*	-0.011	0.0010	-10.792*
VANCOUVER	0.005	0.002	2.8909*	-0.010	0.0019	-5.276*	-0.011	0.0020	-5.345*

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